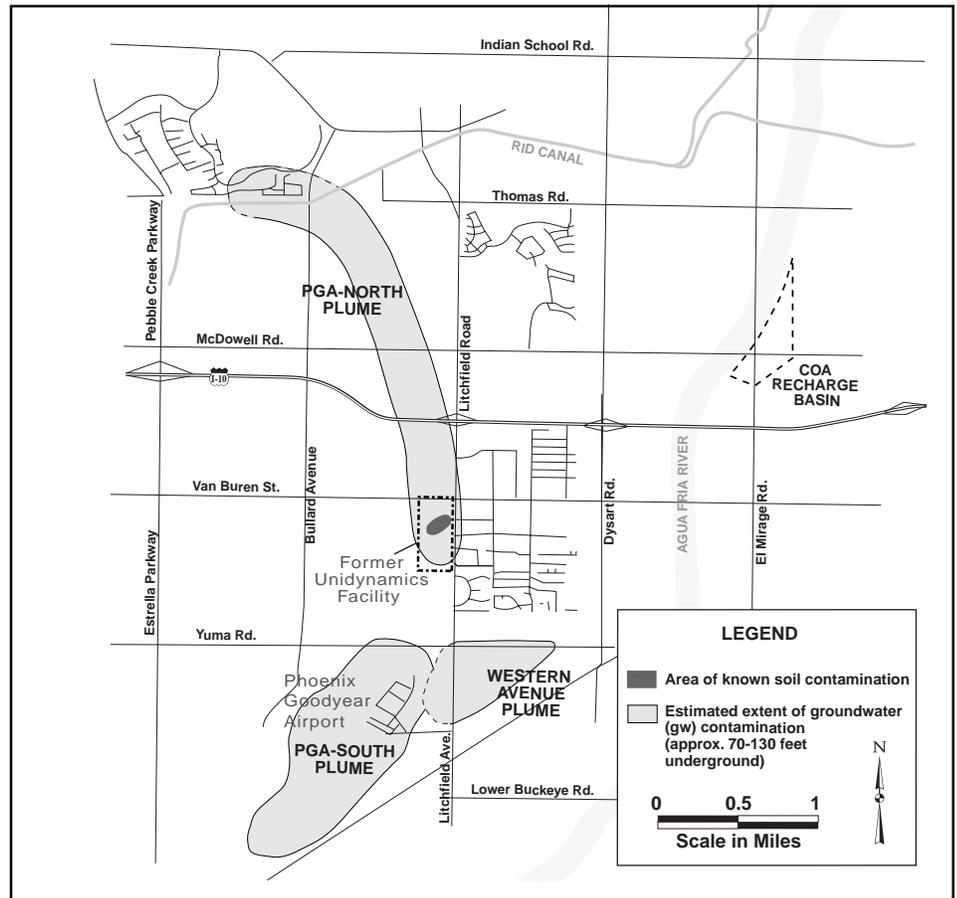


## Update on Cleanup Activities

### Introduction

The U.S. Environmental Protection Agency (EPA) is publishing this fact sheet to provide an update on cleanup activities at the North portion of the Phoenix-Goodyear Airport (PGA) Superfund site in Goodyear, Arizona (PGA North). In addition, this fact sheet provides information regarding liability and disclosure requirements for real estate transactions. PGA North consists of the contamination related to the former Unidynamics Phoenix, Inc. (Unidynamics) facility in Goodyear (see Figure 1). The EPA issued a separate fact sheet about the South portion of the PGA site in January 1999. To obtain a copy of the PGA-South fact sheet, please contact one of the EPA staff listed on the back of this fact sheet.



**Figure 1:** Soil and groundwater contamination at Phoenix Goodyear Airport (PGA) North and South Superfund site and Western Avenue Plume State Superfund site

## PUBLIC MEETING

The EPA will hold an update meeting for community members to learn about the Phoenix-Goodyear Airport Superfund Site and meet project staff:

**Thursday, February 18, 1999 • 6:00 p.m.**

**Agua Fria Union High School District Offices**

**530 E. Riley Drive**

The Agua Fria Union High School District Offices are located in the red brick building at the corner of Dyeart and Riley Roads in Avondale, AZ. Parking is available.

# Municipal Water Supply Not Affected by PGA Groundwater Contamination



Drinking water in the cities of Goodyear and Litchfield Park meets all state and federal drinking water standards and comes from wells not affected by the contamination at the site. Drinking water for residents and businesses north of the I-10 area comes from Litchfield Park Service Company (LPSCO) wells which are located approximately two miles or more northeast of where the contamination is found (see Figure 2). Drinking water for residents and businesses south of I-10 in the vicinity of PGA North and South is supplied by city of Goodyear wells. ADEQ conducts quarterly monitoring of the city of Goodyear, LPSCO, Pebble Creek, and Park Shadows wells and has not detected contaminants above drinking water standards in those wells near the site. Residents of the cities of Goodyear and Litchfield Park, regardless of their proximity to PGA North and South, receive drinking water which meets all state and federal drinking water health standards.

## Site Background

In 1963, Unidynamics began producing materials for the Department of Defense at a manufacturing plant located at Van Buren and Litchfield Roads in the city of Goodyear. From 1963 to 1974, waste was generated and disposed of on the Unidynamics property. Both soil and groundwater are contaminated. Groundwater contamination in the vicinity of the Unidynamics property was discovered by the Arizona Department of Health Services in 1981. Both soil and groundwater are currently being cleaned up at the former Unidynamics facility.

The chemicals in the soil and groundwater at PGA North are common industrial solvents called volatile organic compounds (VOCs). VOCs are compounds that vaporize easily at room temperature. VOCs are commonly used in dry cleaning, paint stripping, metal plating, and machinery degreasing. VOCs found in the soil and groundwater at PGA North include trichloroethylene (TCE), acetone, and methyl ethyl ketone. In addition, perchlorate has been detected in groundwater at the former Unidynamics facility. It is likely that the perchlorate detected in groundwater at PGA North is from ammonium perchlorate, an inorganic salt used in solid rocket fuel, in munitions, and in the pyrotechnics industry. Ammonium perchlorate dissolves as easily as table salt, and the resulting perchlorate anion is stable and can move easily through both groundwater and surface water. These chemicals were released into the environment during operations at Unidynamics. For additional information about perchlorate, please refer to the EPA Web site listed on page 7 of this fact sheet.

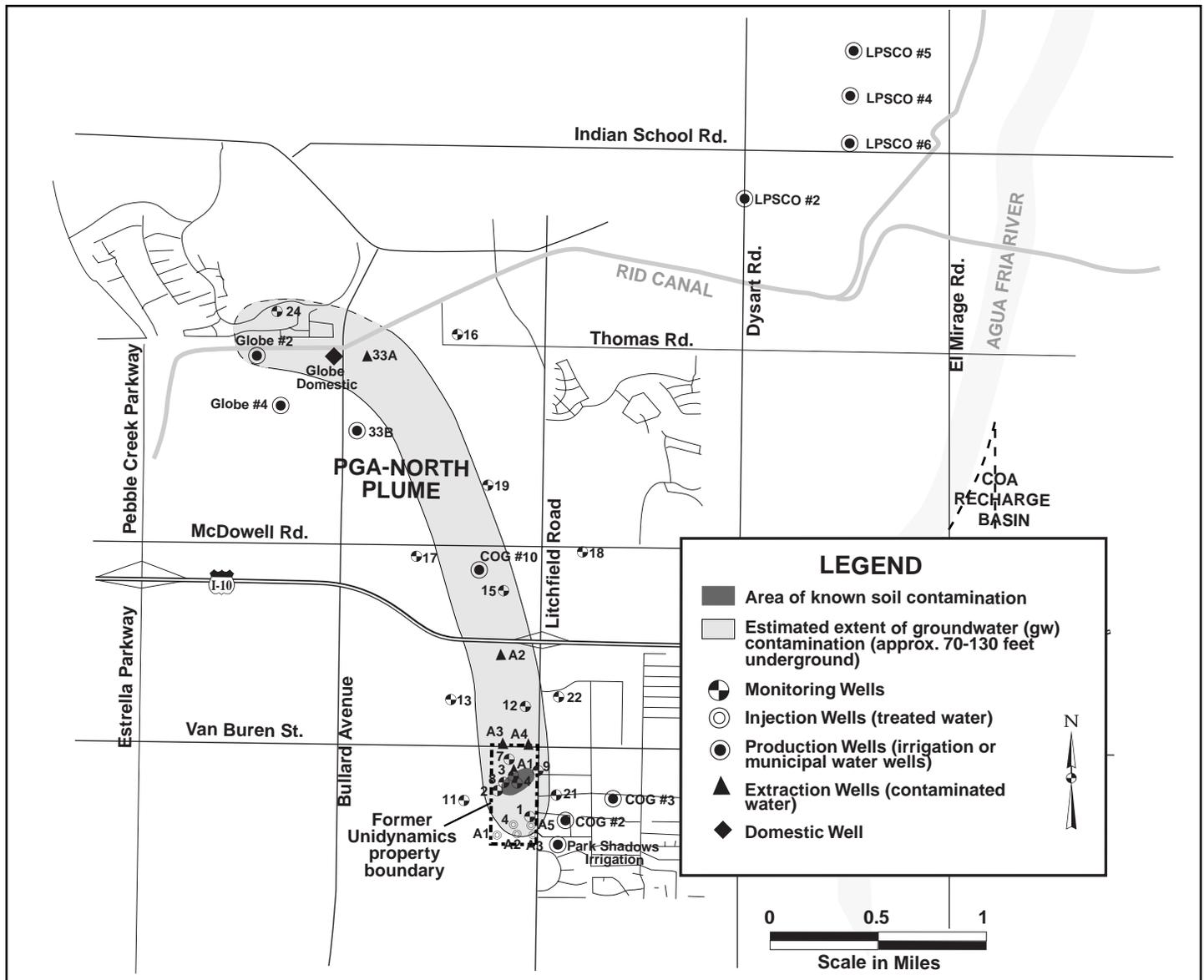
In 1983, the EPA listed the PGA site on the National Priorities List (NPL), a list of hazardous waste sites that are eligible for cleanup under the federal Superfund program (see Figure 1). The EPA began investigating the contamination at PGA North in cooperation with the Arizona Department of Environmental Quality (ADEQ), the Arizona Department of Water Resources (ADWR), and Unidynamics. The formal investigation, known as the Remedial Investigation (RI), began in 1984. The location and concentrations of contaminants in soil and groundwater were identified using surface soil, subsurface soil, air and groundwater sampling.

# Known Areas of Soil and Groundwater Contamination

The EPA's soil investigations indicated that surface contamination at the North PGA area was limited to certain areas within the former Unidynamics property, where the original contaminant disposal took place. Industrial solvents leached into groundwater that is found approximately 70 to 130 feet beneath the surface of the ground. Once the solvents (primarily TCE) reached groundwater, they were carried with the groundwater for a distance of approximately two miles north-northwest from the Unidynamics property (see Figure 2).

Under Superfund law, an NPL site includes all of the contamination related to the site, wherever it

comes to be located. In addition, areas in very close proximity needed to help clean up the contamination may be considered on-site (for example, areas needed for groundwater wells or for treatment facilities). The EPA does not consider uncontaminated surface soils overlying contaminated groundwater to be part of the PGA Super-fund Site, except where surface areas are needed for cleanup activities. The contaminated groundwater at depth is not used as a drinking water supply. Since residents are not exposed to the contaminated groundwater, there are no health risks posed by the presence of contaminated groundwater at PGA-North.



**Figure 2: Soil and groundwater contamination at Phoenix Goodyear Airport (PGA) North Superfund Site**

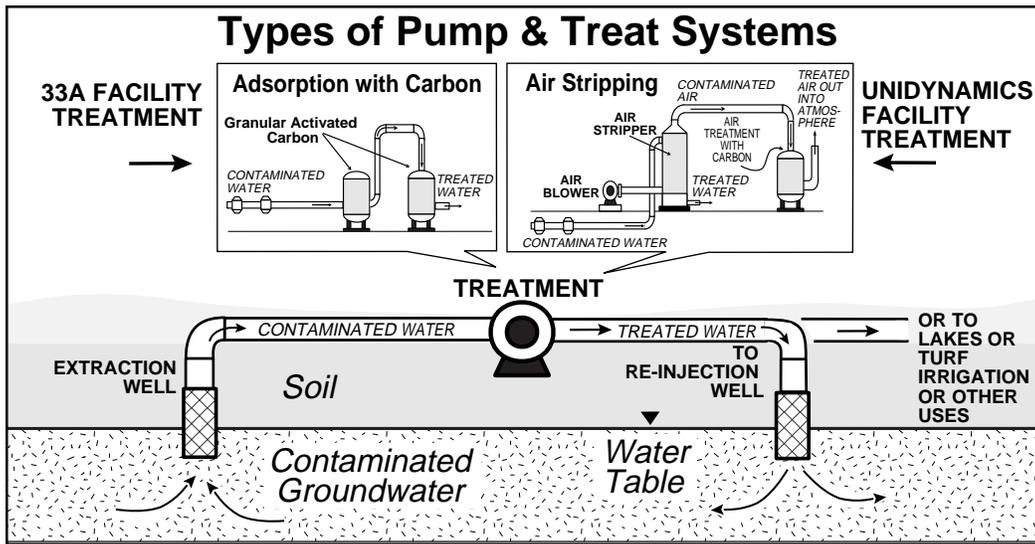


Figure 3: Groundwater Treatment Technologies

## Update on Cleanup Activities - PGA North

In September 1990, the EPA issued an Administrative Order directing Unidynamics to proceed with soil and groundwater remediation for PGA North as described in the EPA's 1989 Record of Decision (ROD) for the PGA Superfund Site. In response to the Administrative Order, Unidynamics established groundwater monitoring, groundwater cleanup, and soil cleanup programs to implement the required cleanup.

### Groundwater Cleanup

Groundwater cleanup is being accomplished through a network of groundwater extraction and groundwater injection wells. The goals of the groundwater cleanup program are (1) containment, i.e., preventing the groundwater plume from migrating further away from the source area, and (2) restoration, i.e., restoring the aquifer to drinking water standards.

A total of six groundwater extraction wells pump approximately 1300 gallons per minute to contain and restore the contaminated aquifer. The extracted water is treated to remove the VOCs and is either re-injected at the former Unidynamics facility or used for irrigation (see Figure 3).

Five of the groundwater extraction wells are at or near the former Unidynamics facility. The treated water from these wells is treated and then re-injected into the upper aquifer on the former Unidynamics property upgradient of the zone of

groundwater contamination. The groundwater treatment unit removes the VOCs using an air stripping technology and then treats the contaminated air coming from the unit with granular activated carbon (GAC). The carbon is sent off-site for regeneration.

One extraction well, 33A, is located north of I-10 near the southeast corner of the Pebble Creek subdivision. This well pumps approximately 1000

gallons per minute from the upper aquifer, treats the water through granular activated carbon, a liquid carbon system, and then provides the treated water for irrigation use, construction use, and turf irrigation of golf courses. In addition, some of the treated water is used in the ornamental lakes on the Pebble Creek property.

The extraction wells have removed approximately 26,000 pounds of VOCs from the groundwater since operation of the system began in 1994. It is estimated that the system at the former Unidynamics facility will operate for at least 25 years.

### Groundwater Monitoring

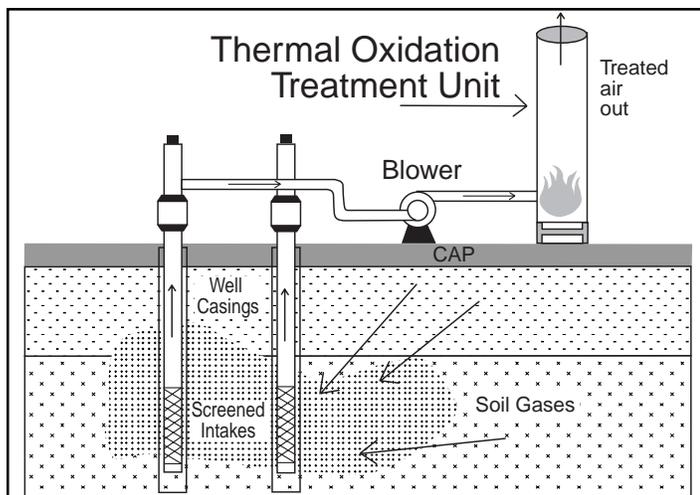
Unidynamics maintains 24 groundwater monitoring wells, 11 of which are located on the former Unidynamics property. Figure 2 shows the location of the monitoring wells, as well as the location of contaminated soil and groundwater. The purposes of the monitoring program are to define the horizontal and vertical extent of contamination, and to provide data on the effectiveness of the groundwater containment and cleanup program. The monitoring wells, along with selected irrigation and private wells to the north and east of the facility, are sampled for VOCs every three months.

### Soil Cleanup using Soil Vapor Extraction (SVE)

As part of the remedial investigation, soil samples were collected on the former Unidynamics facility property. Computer modelling revealed that

the soils above the water table in the Unidynamics' former waste disposal area contained TCE at levels high enough to continue to contaminate the groundwater below. Four soil vapor extraction (SVE) wells were installed to remove VOC vapors from soils above the groundwater table. SVE is a process that extracts the VOCs from the soil in vapor form (see Figure 4). By applying a vacuum through a system of underground wells, contaminants are pulled to the surface as vapor.

The SVE treatment system for the North PGA area has operated since 1994, using a treatment process called thermal oxidation. The purpose of the thermal oxidation technology is to destroy the contaminants by heating the soil gas to a high temperature (greater than 1400 degrees F) where the contaminants are broken down. However, it is possible that trace amounts of the original contaminants (in this case VOCs) and some by-product chemicals may be formed and emitted into the air. Dioxins and furans in trace amounts are the by-product chemicals that are the greatest concern when using thermal oxidation because they are known cancer-causing compounds. Based on EPA experience with similar cleanup systems for the types and quantities of vapors that are present at the PGA site, we do not believe that emissions of VOCs, dioxins and furans, if they are occurring, would pose any elevated threat to public health. Approximately 10,000 pounds of TCE have been removed from the source area by the SVE system (through 1998). The SVE system was turned off in October 1998 to evaluate the need for continued soil vapor extraction at PGA North.



**Figure 4:** Soil Vapor Extraction Technology

## Superfund Liability

Some residents in the area of the PGA Superfund site have had questions regarding Superfund and liability issues. The next section of this fact sheet addresses these questions. The federal Superfund law, known officially as the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), was put in place by Congress to respond directly to uncontrolled or abandoned "releases" (spills, dumping, or other disposal) of hazardous substances. As required by CERCLA, the EPA has created the National Priorities List (NPL), a list of the nation's highest priority "releases" or sites. A site placed on the NPL is eligible for federal funding for long-term cleanup actions where the responsible parties are unknown, unwilling, or incapable of resolving the environmental problems. CERCLA authorizes the EPA to take legal action to ensure that responsible parties either clean up the pollution with the EPA's oversight or reimburse the EPA for the cost of the cleanup.

With respect to releases of hazardous substances from facilities, CERCLA creates potential liability for four categories of parties: (1) current owners and operators of the facility, (2) former owners and operators of the facility at the time hazardous substances were disposed, (3) persons who transported the hazardous substances, if they selected the facility, and (4) persons who generated wastes that were disposed at the facility. The term facility is defined broadly to include any area where hazardous substances have come to be located.

## Homeowners Protected from Superfund Liability

In 1991, the EPA issued the Agency's Superfund "Policy Toward Owners of Residential Property at Superfund Sites." Pursuant to the policy, the EPA will not take enforcement actions against an owner of residential property to require the owner to conduct a Superfund cleanup or pay for cleanup actions at Superfund sites, unless the residential homeowner caused or worsened a release or threat of release of hazardous substances or failed to cooperate with cleanup activities. Although the policy does not provide an exemption from potential Superfund liability for any party, it does clarify the Agency's enforcement policy with respect to residential homeowners. For purposes of this policy, the EPA defines residential property consistent with the

U.S. Housing and Urban Development definition: “single family residences of one to four units.” The policy is limited to residential homeowners and does not extend to commercial properties.

This policy is designed to alleviate concerns that the EPA may target residential homeowners or their lenders for Superfund cleanup.

### Policy Toward Owners of Property Containing Contaminated Aquifers Protected from Superfund Liability

In 1995, the EPA issued the Agency’s “Policy Toward Owners of Property Containing Contaminated Aquifers.” This policy states that, subject to certain conditions, where hazardous substances have come to be located on or in a property solely as the result of subsurface migration in an aquifer from a source or sources outside the property, the EPA will not take Superfund enforcement actions against the owner of such property to require the performance of cleanup work or the payment of cleanup costs. The significance of this new policy is that it is relevant not just to residential owners, but to all property owners including owners of commercial or industrial properties. It must be noted that the landowner must still cooperate with cleanup activities and must not have caused or worsened the contamination. In addition, the EPA may consider *de minimis* settlements under Superfund law where necessary to protect such landowners from third-party contribution lawsuits.

### Real Estate Disclosure

Although a Superfund site or facility is sometimes believed to be a geographic area defined by property lines, it is actually the area that includes the source or sources of contamination, and any

areas where a hazardous substance has come to be located. In addition, suitable areas in very close proximity to the contamination and necessary for implementation of the response action are considered part of the Superfund site.

The Arizona Department of Real Estate (ADRE) regulates real estate licensees and requires licensees to make disclosures in accordance with A.A.C. R4-28-1101 (A) and (B). With respect to the North PGA area, licensees of property with contaminated soil or groundwater and/or where study is continuing, may have responsibilities under Arizona law to disclose this information to prospective purchasers. Figure 1 illustrates the approximate location of source areas and areas where groundwater contamination has migrated.

The presence of a Superfund site often creates apprehension and negative perceptions among community citizens as well as business people and developers. At the PGA Superfund site, the EPA is implementing the Superfund cleanup process in a way that alleviates community concerns and allows for growth and development. Protection of public health and the environment has always been our priority throughout a Superfund cleanup. The EPA will continue its coordination with the state of Arizona to ensure the protection of public health and the environment. If you have any concern about how the PGA site may affect you, please do not hesitate to contact the EPA immediately (see back page for contact information). The EPA will provide personalized information and attention to ensure that concerns about the PGA Superfund site are addressed. ■

## *Calling All Private Well Owners and Users!*

Do you know where the water in your house comes from? The vast majority of people in the cities of Goodyear and Litchfield Park get their water from municipal water suppliers such as a city water department. It is possible that a few homes get their water directly from a well in their backyard. These wells are private wells. If you are using a private well in the area of any of the groundwater contamination associated with the PGA site or the Western Avenue site shown in Figures 1 and 2, please contact the EPA or ADEQ representative shown on the back page of this factsheet. The EPA or ADEQ may be willing to test your well FREE OF CHARGE to ensure that your drinking water does not contain the groundwater contamination associated with the PGA or Western Avenue Superfund sites.

# INFORMATION REPOSITORIES .....

Additional copies of this fact sheet and other documents related to the Phoenix-Goodyear Airport Superfund Site are available for review at the locations listed below.

**Avondale Public Library**  
328 West Western Avenue  
Avondale, AZ 85323  
Tel: (602) 932-9415



Hours: Mon, Tu & Th: 9:00 a.m.-6:00 p.m.  
Wednesday: 9:00 a.m.-8:00 p.m.  
Friday: 9:00 a.m.-5:00 p.m.  
Saturday: 9:00 a.m.-1:00 p.m.  
Sunday: Closed

**Superfund Records Center**  
95 Hawthorne Street, Suite 403S  
San Francisco, CA 94105-3901  
Tel: (415) 536-2000

Hours: Mon to Fri: 8:00 a.m.-5:00 p.m.  
Sat & Sun: Closed

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You may access certain EPA documents electronically on the Internet:

- EPA Web site: <http://www.epa.gov>
- EPA Superfund Web site: <http://www.epa.gov/superfund>
- EPA Brownfields Web site: <http://www.epa.gov/swerops/bf/gdc.htm>
- Region 9 Web site: <http://www.epa.gov/region09>
- EPA Perchlorate Web site: <http://www.epa.gov/ogwdw/ccl/perchlor/perchlo.html>



# HOW TO ORDER EPA GUIDANCE DOCUMENTS.....

For a nominal fee, you may order copies of EPA guidance documents on Superfund law and liability from the National Technical Information Service:

- Mail:** National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161
- Telephone:** (703) 487-4650 for regular service, or (800) 553-NTIS for rush service
- Email:** [orders@ntis.fedworld.gov](mailto:orders@ntis.fedworld.gov)
- World WideWeb site:** <http://www.ntis.gov>



## MAILING LIST COUPON.....

If you did not receive this fact sheet in the mail and would like to be included on the mailing list for the Phoenix-Goodyear Airport Superfund Site, please fill out this coupon and return it to the address below.

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ORGANIZATIONAL AFFILIATION (if applicable): \_\_\_\_\_

Please return to: Catherine McCracken, Community Involvement Specialist, 75 Hawthorne Street (SFD-3), San Francisco, CA 94105-3901. You may also provide the above information via email to: [mccracken.catherine@epamail.epa.gov](mailto:mccracken.catherine@epamail.epa.gov)

..... **FOR MORE INFORMATION** .....

For additional information about the Phoenix-Goodyear Airport Superfund Site, please contact:

**Arizona Department of Environmental Quality**

Kris Kommalan, Environmental Program Specialist  
3033 North Central Avenue  
Phoenix, AZ 85012  
Tel: (602) 207-4193 or (800) 207-5677, ext. 4180

Kurt Zeppetello, Groundwater Hydrologist  
3033 North Central Avenue  
Phoenix, AZ 85012  
(602) 207-4410

**U.S. Environmental Protection Agency, Region 9**

**North PGA**

Emily Roth, Remedial Project Manager  
Telephone: (415) 744-2247

**Legal Issues**

Arthur Haubenstock, Attorney  
Telephone: (415) 744-1355

**South PGA**

Craig Cooper, Remedial Project Manager  
Telephone: (415) 744-2370

**Underground storage tank activities**

Chris Prokop, Geologist  
Telephone: (415) 744-2104

**Community Involvement**

Catherine McCracken  
Community Involvement Specialist  
Telephone: (415) 744-2182  
Email: mcracken.catherine@epamail.epa.gov

**Media Inquiries**

Lois Grunwald  
Public Affairs Specialist  
Telephone: (415) 744-1588

...or you may leave a message toll-free at **(800) 231-3075** and your call will be returned.



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