CONSUMER CONFIDENCE REPORT

Phoenix Water Services Department

1998 Water Quality Annual Report

A Publication for the Citizens of Phoenix

Phoenix's drinking water meets health and safety standards during '98

(NOTE: This report contains important information about your drinking water. If you need the report in Spanish, call (602) 262-6251.)

(NOTA: Este informe contiene información importante sobre su agua potable. Si usted necesita el informe en Español, llame (602) 262-6251.)

A year-end review of water quality tests confirmed that once again Phoenix customers received water that met all health and safety standards for drinking water during the period from January 1 through December 31,1998. The nearly 90,000 tests conducted during the year showed the water quality to be generally much better than required by law.

Phoenix regularly tests for 146 substances — many more than required by law — to ensure the city's drinking water meets every established standard. Most of the standards are included in the federal Safe Drinking Water Act, administered by the U.S. Environmental Protection Agency (EPA). Some are set at the state, county or city level.

While meeting health and safety standards is a primary objective, other departmental objectives include making certain the water supply is reliable and affordable and service is responsive. The department's staff achieved all those objectives through hard work and dedication to the concept that by any comparison, the department will be the best of class. During the year only a few hundred people experienced an interruption of service — usually due to an accident that broke a water main — and rates remained among the lowest in the nation. Phoenix residents get an average of more than five gallons from their tap for only one cent.

Phoenix gets most of its water from rivers and canals

More than 95 percent of Phoenix's water comes from rivers. The primary sources of raw (untreated) water are the Salt, Verde and Colorado rivers; some water from the Agua Fria River is mixed with Colorado River water.

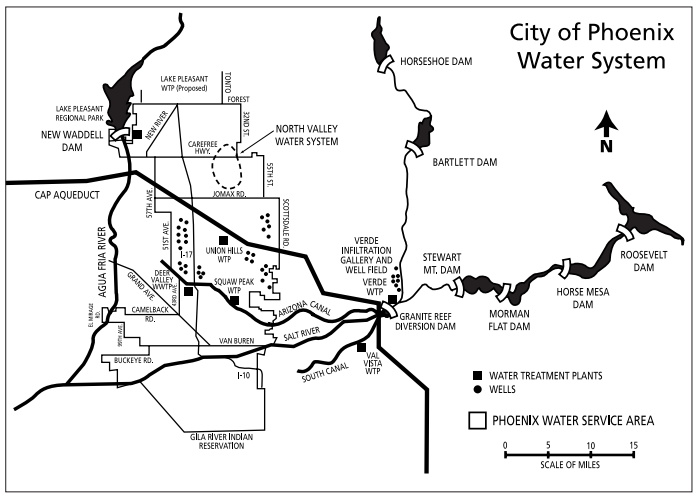
The Salt and Verde rivers drain about 13,000 square miles of Arizona ranging from parts of the White Mountains near the New Mexico border to Big Chino Valley just south and east of Seligman. Water from the rivers is stored in lakes operated by the Salt River Project (SRP) and delivered to the city via SRP's canals.

The Colorado River drains portions of seven states (Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming) on the west side of the Rocky Mountains. Water from the Colorado River flows through the Central Arizona Project (CAP) canal from Lake Havasu to Lake Pleasant on the Agua Fria River, which drains an area south of Prescott on either side of I-17.

Regular testing of the water flowing into the city's water treatment plants helps ensure consistently high quality water is delivered to customers.

Deep wells that tap high quality aquifers produce the remaining three-to-four percent of the city's water. Wells primarily are considered a source of water in case of serious drought. They also are used to supplement surface water supplies during times of high demand and to supply customers where water mains have not yet been installed to deliver surface water. The wells are tested regularly to make certain their water meets all health and safety standards.

During 1998, the Phoenix Water Services Department operated wells to supply a small system that could not receive surface water. Known as the North Valley Water System, it serves a very small area in northern Phoenix just east of I-17. Water in that system also met all established health and safety standards. By mid 1999, new water mains will be installed and those customers will be served by surface water. The wells will become part of the city's backup supply.



Phoenix's water treatment plants can provide about 630 million gallons per day (MGD) for customers while the wells can add about 50 MGD to the supply. In comparison, the greatest demand by customers was about 430 MGD and the average daily demand was about 280 MGD. The excess capacity helped ensure all demands could be met even if one or two of the plants had to be taken out of service for maintenance when demand was greatest. The city's distribution system, with more than 5,500 miles of water mains, connects all the plants to customers. The system makes it technically possible to provide water from any plant to any part of town. However, customers usually receive most of their water from the plant or plants closest to them.

Purification process cleans, disinfects water

Although some minor differences exist between the city's five water treatment plants, the purification process is fairly similar, echoing nature's way of cleaning water. Consequently, water quality throughout the city is relatively consistent.

The water is delivered to the treatment plants through canals. The first step in purification removes the largest of the particles such as sand, dirt, plant matter and other materials commonly found in river water. For this step the water's movement is slowed so heavier particles can settle to the bottom of a large basin. The small particles remaining in the water are too light to settle easily, so a carefully measured chemical coagulant, such as alum, is added to the water. The coagulant causes the tiny particles to cling together and become heavy enough to settle. Then, the clean water is decanted off the top and passed through filters of sand and gravel — and sometimes hard (anthracite) coal — to remove the last of the particulate matter.

With this filtering system and the Water Services Department's self-imposed quality standards, water produced at the plants is of superior clarity. The current federal standard for turbidity (cloudiness) is 0.5 Nephelometric Turbidity Units (NTU — a measure of clarity) in at least 95 percent of the measurements taken each month and must not exceed 5 NTU at any time. The city's water complied with the standards and usually is much better, and meets a goal of 0.1 NTU 90 percent of the time. This clarity is particularly important because it is a good indicator the process is removing organisms and organic matter effectively.

In the final stage of water treatment, a small quantity of disinfectant (chlorine-related products) is added to kill bacteria that may be in the water. Chlorine, which has been widely used since the early 1900s, has eliminated outbreaks of waterborne diseases such as cholera and typhoid throughout the U.S. and Canada. Unfortunately, these diseases still are common in many other parts of the world.

Federal law requires specific levels of chlorine, or other disinfectants, to be in drinking water when it is delivered to customers. The city's target level is 1.0 part per million (ppm) and a minimum of 0.4 ppm. These guidelines help Phoenix water comply with EPA's requirements.

Research has shown disinfection by-products (DBPs) are formed when natural organic matter in water reacts with chemicals used for disinfection. Some DBPs, such as trihalomethanes (THMs), are suspected of having long-term health effects. The water used at treatment plants contains only small quantities of organic matter. Also, to help reduce the production of DBPs, the purification process used by the city emphasizes removal of organic matter before most disinfection takes place. This approach has helped the city to keep THMs well below the level considered as a possible hazard. (See chart for details.)

Use of disinfectants presents an apparent paradox: it is essential to disinfect the water to prevent widespread outbreaks of serious diseases and comply with EPA standards, but the use of chlorine can create DBPs. To help deal with this perplexing problem, EPA established the Information Collection Rule (ICR). Under that rule, Phoenix and other large water utilities in the country collect specific data about water quality and operations. EPA plans to use the data to develop regulations to minimize DBP formation while providing adequate disinfection.

Also added during the final stage of treatment is a small quantity of fluoride to help prevent tooth decay. The target level for fluoride is 0.75 ppm, about one fifth the maximum allowed by EPA.

Cryptosporidium and your drinking water

For a number of years Phoenix has tested its water for various microbiological hazards, including Cryptosporidium (often called Crypto, for short) and Giardia. Again this year, we found no evidence of these potentially hazardous organisms in the city's drinking water. However, both are known to exist in much of the world's surface water, including the rivers that supply water to Phoenix. Giardia can be killed by chlorine, but Crypto often is unaffected by it; while the filter system at the city's purification plants has proven effective in removing both organisms from water, this method does not guarantee 100 percent removal.

Crypto and Giardia are carried in fecal matter of various animals that live on the watersheds of the rivers. Much of the time the organisms are protected by a hard shell (called a cyst), allowing them to live outside the host's body. Once the cyst is swallowed by an animal, including people (as when drinking unpurified stream water), the organism emerges from its shell and infects the intestinal tract.

People who are infected usually have flu-like symptoms, including intestinal cramping, diarrhea, fever, and dehydration. Crypto often is considered the more debilitating, although in otherwise healthy people, the diseases produced are self-limiting and the symptoms usually disappear in a week or two. However, infection can be extremely serious for people with compromised or suppressed immune systems, such as chemotherapy patients, organ and bone marrow recipients, or those with HIV or AIDS. People in these categories can develop life-threatening illnesses and should check with their health care provider to determine any protective measures they should take.

Crypto must be ingested to cause disease and it can be spread through means other than drinking water. There were no cases of the disease caused by either organism attributed to the public water supply in our service area.

For more information about Cryptosporidium, Giardia and other microbial contaminants, contact the EPA's Safe Drinking Water Hotline (800-426-4791).

City works to improve industry practices

Phoenix's efforts on behalf of quality extend far beyond the city's water production and distribution system. For example, in 1995, Phoenix was a founding participant of the nationwide Partnership for Safe Water. The partnership is a voluntary program developed by the EPA, local water providers, various water industry organizations and governmental agencies to reduce potential risks microbial contaminants may cause for drinking water consumers.

As part of the partnership, Phoenix installed tens of thousands of dollars worth of monitoring equipment and devoted thousands of staff hours to increase the water department's ability to monitor water quality and refine operating procedures. The knowledge gained is reported to health officials, regulators and the water industry so all may benefit.

Local water consumers are benefitting because the city modified its plants and operations to do an even better job of treating water. Now, water at the city's treatment plants surpasses existing regulatory requirements and usually achieves the partnership's extremely stringent goal for clarity of filtered water — a critical indicator of the plants' performance.

More information about the Partnership for Safe Water is available from the American Water Works Association's website — http://www.awwa.org/partner1.html on the internet.

Tests show water meets standards for lead and copper

In 1992, EPA ordered that water suppliers do periodic tests for lead and copper in household tap water. Tests in 1998 showed Phoenix tap water met the MCL for both metals. However, some homes have hazardous quantities of lead that appears to come from either lead solder used to connect the homes' copper pipe or fixtures that have lead in them. The lead is leached out of the solder or fixtures by the water.

Infants and young children are typically more vulnerable to lead in drinking water than the general population. Customers should be aware that lead levels in their homes could be greater than in most homes here due to materials used in the home's plumbing. Those concerned about elevated lead levels in their home's water, may wish to have their water tested. (The test usually

costs $15 - $20.) Running water from a tap for 30 seconds to two minutes before using the water can reduce concentrations caused by indoor plumbing. (Because water is so precious here, catch the flush water in a container and use it to water plants inside and outside the home.) It is wise to use only cold water for drinking, cooking or preparing beverages because hot water dissolves lead more quickly than cold water.

Tap water meets or surpasses standards for bottled water

Some consumers choose to use bottled water or install filters in their homes. Such a choice is purely personal because the city's tap water meets or surpasses all health and safety standards. However, some facts should be noted when considering alternatives to using tap water for drinking.

Bottled water and water passed through home filtration systems may contain contaminants, as may tap water. The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. When traveling over the surface of the land or through the ground, water dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

(A) microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

(B) inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

(C) pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and recreational uses.

(D) organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.

(E) radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

It is reasonable to expect drinking water, including bottled water, to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Safe Drinking Water Hotline (800-426-4791).

With respect to filters, the EPA, Consumer Reports, Reader's Digest and a wide variety of organizations interested in consumer quality generally have stated that filters are not needed in most large cities to ensure safe drinking water. These consumer, regulatory and testing organizations point out the local water supplier in large cities has excellent equipment, well trained personnel and a high level of testing, resulting in water that meets health and safety standards. The reports also say filters are an appropriate way to change the aesthetics (taste, odor and appearance) of tap water and lower cost charcoal filters often do an excellent job of altering these aesthetic characteristics. Some types of filters also provide additional protection for members of the community with compromised immune systems.

It is important to note that when using a filter, following the manufacturer's instructions concerning cleaning and/or changing the filter is essential. Failure to do so can result in a serious potential for unsafe water.

Customers should understand that some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer undergoing chemotherapy, people who have undergone organ transplants, those with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) guidelines about appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Testing shows Phoenix's water superior to standards

The following tables show substances for which the Water Services Department tests, the levels of substances found and the levels beyond which the substance is considered unsafe by the EPA, the Arizona Department of Environmental Quality or other regulatory body. **Please note, the simple presence of a substance or contaminant in drinking water does NOT necessarily indicate the drinking water poses a health risk.** Certain quantities of some substances are essential to good health, but excessive quantities can be hazardous. Similarly, small quantities of some substances may have no effect on people, but large quantities can be harmful.

Recently, Phoenix conducted voluntary sampling of the city's groundwater and surface water sources for two substances found recently in California and Nevada. The substances are Perchlorate and Methyl Tertiary Butyl Ether (MTBE). There are no state of Arizona or federal standards for either substance. No MTBE was found in any of the tests. A low level of Perchlorate was found at two sites.

Perchlorate is a strong oxidant used primarily in solid fuel rocket motors, fireworks and explosive devices. Perchlorate's primary human health concern is that it can interfere with the thyroid gland's ability to utilize iodine and produce thyroid hormones. The substance also can cause brain damage in fetuses and a potentially fatal form of anemia in adults. The California Department of Health Services has established a provisional "action level" for Perchlorate of 18 ppb. According to a California Department of Health Services news release, "Perchlorate levels below 18 ppb are not considered a health concern for the public, including pregnant women and children." Phoenix conducted tests for both contaminants at 31 sites and found Perchlorate at only two locations with the highest level being only 7.8 ppb, less than half California's action level.

MTBE is an oxygenate used in gasoline to produce a cleaner burning fuel, thereby aiding air quality. Little health effects data is available regarding ingestion of MTBE. In December 1997, EPA released an advisory recommending levels of MTBE be in the range of 20-to-40 ppb would provide a large margin of safety from exposure to toxic effects. A final health advisory has not been issued. No MTBE was found at any test site.

How to learn more about the quality of your water

The Phoenix Water Services Department regularly tests the water it purifies for its customers to make sure it complies with all applicable health and safety standards. This annual report summarizes the results of nearly 90,000 water quality tests done during 1998. Even more tests are being done this year to ensure customers that their tap water is safe. If you have questions about the quality of your tap water, or the information in this report, please call us at (602) 262-6251 during normal business hours (Monday through Friday, except holidays, from 8:00 a.m. to 5:00 p.m.) You also can visit the city's web site at http://www.ci.phoenix.az.us for more information. Specific queries may be addressed to James C. "Bing" Brown, APR, at the Water Services Department,

200 W. Washington, 9th Floor, Phoenix, AZ 85003.

Or, you may contact the EPA Safe Drinking Water Hotline (800-426-4791) for information about the Safe Drinking Water Act or EPA's other drinking water programs.

World Wide Web sites that provide information about drinking water include (all web sites use the prefix, http://www.):

- American Water Works Assn. — awwa.org
- Arizona Dept. of Health Services — hs.state.az.us
- Maricopa County Environmental Services — maricopa.gov/sbeat
- U.S. EPA — epa.gov/ogwdw
- Centers for Disease Control — cdc.gov
- Arizona Department of Environmental Quality — adeq.state.az.us

Policies and procedures concerning the city's water supply, treatment and delivery are the responsibility of the Director of the Water Services Department and his staff, as authorized by the Phoenix City Council. Customers interested in providing input concerning the city's water supply, treatment and delivery, may contact the director at 200 W. Washington, 9th Floor, Phoenix, AZ, 85003, call the department's Customer Service Division at (602) 262-6251 or attend City Council meetings in the City Council Chambers, 251 W. Washington. Meetings generally are held as follows: Policy Sessions at 2:30 p.m. each Tuesday (to discuss policy, provide directives to staff, but not to take official action); Formal Sessions at 3:00 p.m. Wednesdays (to take official actions, including passage of ordinances); and Citizen Request Sessions immediately following the Formal Sessions. Items for Formal and Policy session agendas must be posted by the City Clerk 24 hours before the meetings and citizen comments at those meetings are restricted to agenda items. Citizens who wish to address the City Council about non-agenda items may do so at the Citizen Request Sessions. Also, citizens can apply to serve as a member of the unpaid Citizens Water and Wastewater Rate Advisory Committee by contacting the Water Services Department. That committee generally meets the second Tuesday of each month at 2 p.m. in the City Council Subcommittee Meeting Room of the Historic City Hall, 17 S. 2nd Ave., Phoenix.

Definitions of terms

The following are definitions of terms used to describe types of limits for substances that may be found in drinking water and the circumstances under which compliance with the limits may be excused.

Maximum Contaminant Level Goal (MCLG) — The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Contaminant Level (MCL) — The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as feasible using the best available treatment technology.

Variances and Exceptions — State or EPA permission to not meet an MCL or a treatment technique under certain conditions.

Treatment Technique (TT) — A required process intended to reduce the

DISTRIBUTION SYSTEM SAMPLING

Contaminant	MCL	MCLG	Phoenix Municipal Water System	North Valley Water System	Major Sources in Drinking Water
Microbiological Contaminants					
Total Coliform Bacteria	No more than 5% of the monthly samples may be total coliform positive	0.0			Naturally present in the environment.
Highest monthly percentage of positive Total Coliform samples			0.88%	0.00%	
Highest monthly number of positive Total Coliform samples			3	0	
Fecal Coliform and *E. coli*	If a routine sample and a repeat sample are Total Coliform positive, and one is also Fecal Coliform, or *E.coli* positive	0.0			Human and animal fecal waste.
Total number of positive Fecal Coliform and *E. coli* samples			0	0	
Turbidity					
Turbidity	TT (Turbidity of filtered water shall be less than or equal to 0.5 NTU in at least 95% of the measurements taken each month and must not exceed 5 NTU at any time)	NA			Soil runoff.
Lowest monthly percentage in which turbidity was less than or equal to 0.5 NTU			98.9%	NA	
Highest single turbidity measurement in any one month (NTU)			0.89	NA	
Total Trihalomethanes (TTHMs)					
TTHMs	Running annual average of 100 ppb	0.0			By-product of drinking water chlorination.
Running annual average (ppb)			60	NA	
Lowest detected level (ppb)			32	NA	
Highest detected level (ppb)			108	NA	

HOMES TAP SAMPLING

Contaminant	MCL	MCLG	Phoenix Municipal Water System	North Valley Water System	Major Sources in Drinking Water
Lead and Copper					
Lead	90th percentile not to exceed the AL (AL=15 ppb)	0.0			Corrosion of household plumbing systems; Erosion of natural deposits.
Total number of samples collected in 1998			256	NA	
90th percentile (ppb)			3.8	NA	
Number of sampling sites exceeding the Action Level (AL)			4	NA	
Copper	90th percentile not to exceed the AL (AL=1.3 ppb)	1.3			Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.
Total number of samples collected in 1998			255	NA	
90th percentile (ppm)			0.3	NA	
Number of sampling sites exceeding the Action Level (AL)			0	NA	

VOLATILE ORGANIC CONTAMINANTS

				Phx Municipal Water System			North Valley Water System			
Contaminant	**Units**	**MCL**	**MCLG**	**Lowest Detected Level**	**Highest Detected Level**	**Highest Detected Average[2]**	**Lowest Detected Level**	**Highest Detected Level**	**Highest Detected Average[2]**	**Major Sources in Drinking Water**
Benzene	ppb	5	0.0	ND	ND	ND	ND	ND	ND	Discharge from factories; Leaching from gas storage tanks and landfills.
Carbon Tetrachloride	ppb	5	0.0	ND	ND	ND	ND	ND	ND	Discharge from chemical plants and other industrial activities.
Chlorobenzene	ppb	100	100	ND	ND	ND	ND	ND	ND	Discharge from chemical and agricultural chemical factories.
o-Dichlorobenzene	ppb	600	600	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories.
p-Dichlorobenzene	ppb	75	75	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories.
1,2-Dichloroethane	ppb	5	0.0	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories.
1,1-Dichloroethylene	ppb	7	7	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories.
cis-1,2-Dichloroethylene	ppb	70	70	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories.
trans-1,2-Dichloroethylene	ppb	100	100	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories.
Dichloromethane	ppb	5	0.0	ND	ND	ND	ND	ND	ND	Discharge from pharmaceutical and chemical factories.
1,2-Dichloropropane	ppb	5	0.0	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories.
Ethylbenzene	ppb	700	700	ND	ND	ND	ND	0.5	0.5	Discharge from petroleum refineries.
Styrene	ppb	100	100	ND	ND	ND	ND	1.2	0.24	Discharge from rubber and plastic factories; Leaching from landfills.
Tetrachloroethylene	ppb	5	0.0	ND	ND	ND	ND	ND	ND	Leaching from PVC pipes; Discharge from factories and dry cleaners.
1,2,4-Trichlorobenzene	ppb	70	70	ND	ND	ND	ND	ND	ND	Discharge from textile-finishing factories.
1,1,1-Trichloroethane	ppb	200	200	ND	ND	ND	ND	ND	ND	Discharge from metal degreasing sites and other factories.
1,1,2-Trichloroethane	ppb	5	3	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories.
Trichloroethylene (TCE)	ppb	5	0.0	ND	ND	ND	ND	ND	ND	Discharge from metal degreasing sites and other factories.
Total Trihalomethanes (TTHMs)	ppb	100	0.0	6	71.4	36.4	NA	NA	NA	By-product of drinking water chlorination.
Toluene	ppm	1	1	ND	ND	ND	ND	ND	ND	Discharge from petroleum factories.
Vinyl Chloride	ppb	2	0.0	ND	ND	ND	ND	ND	ND	Leaching from PVC pipes; Discharge from plastic factories.
Xylenes	ppm	10	10	ND	ND	ND	ND	0.0025	0.0005	Discharge from petroleum factories; Discharge from chemical factories.

UNREGULATED VOLATILE ORGANIC CONTAMINANTS[4]

				Phx Municipal Water System			North Valley Water System		
Contaminant	**Units**	**MDL**	**MCLG**	**Lowest Detected Level**	**Highest Detected Level**	**Highest Detected Average[2]**	**Lowest Detected Level**	**Highest Detected Level**	**Highest Detected Average[2]**
Bromobenzene	ppb	0.5	NA	ND	ND	ND	ND	ND	ND
Bromomethane	ppb	0.5	NA	ND	ND	ND	ND	ND	ND
Chloroethane	ppb	0.5	NA	ND	ND	ND	ND	ND	ND
Chloromethane	ppb	0.5	NA	ND	ND	ND	ND	ND	ND
Dibromomethane	ppb	0.5	NA	ND	ND	ND	ND	ND	ND
o-Chlorotoluene	ppb	0.5	NA	ND	ND	ND	ND	ND	ND
p-Chlorotoluene	ppb	0.5	NA	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ppb	0.5	NA	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	ppb	0.5	NA	ND	ND	ND	ND	ND	ND
m-Dichlorobenzene	ppb	0.5	NA	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ppb	0.5	NA	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ppb	0.5	NA	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ppb	0.5	NA	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	ppb	0.5	NA	ND	ND	ND	ND	ND	ND
1,3-Dichloropropene	ppb	0.5	NA	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	ppb	0.5	NA	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ppb	0.5	NA	ND	17.6	17.6	ND	ND	ND
Bromoform	ppb	0.5	NA	ND	3.9	3.9	ND	ND	ND
Chlorodibromomethane	ppb	0.5	NA	ND	12.4	12.4	ND	ND	ND
Chloroform	ppb	0.5	NA	ND	40.2	40.2	ND	ND	ND

RADIOACTIVE CONTAMINANTS

				Phx Municipal Water System			North Valley Water System			
Contaminant	**Units**	**MCL**	**MCLG**	**Lowest Detected Level**	**Highest Detected Level**	**Highest Detected Average[2]**	**Lowest Detected Level**	**Highest Detected Level**	**Highest Detected Average[2]**	**Major Sources in Drinking Water**
Gross Beta/photon emitters	pCi/L	50[3]	0.0	ND	23	23	NA	NA	NA	Decay of natural and man-made deposits.
Adjusted Gross Alpha	pCi/L	15	0.0	ND	9.5	3.4	1	4.6	2.9	Erosion of natural deposits.
Combined Radium	pCi/L	5	0.0	NA	NA	NA	NA	NA	NA	Erosion of natural deposits.

level of a contaminant in drinking water.

Action Level (AL) — The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Part per million/part per billion — One part per million (1 ppm) is equal to one second out of 11.5 days, one inch in 16 miles or 2 a dissolved aspirin tablet in a bathtub full of water (about 50 gallons). One part per billion (1 ppb) is equal to one second in 31 years and eight months, one inch in 16,000 miles (1 inch out of 6.5 trips from New York to Los Angeles) or 2 dissolved aspirins in 1,000 bathtubs full of water (about 50,000 gallons).

Abbreviations/Superscripts used in tables

AL = Action Level

MCL = Maximum Contaminant Level

MCLG = Maximum Contaminant Level Goal

MDL = Method Detection Limit

MFL = Million Fibers per Liter

mrem/year = millirems per year (a measure of radiation absorbed by the body)

NA = Not Applicable

ND = Not Detected (any value less than the MDL)

NTU = Nephelometric Turbidity Units

pCi/L = picocuries per liter (a measure of radioactivity)

ppb = parts per billion, or micrograms per liter (µg/L)

ppm = parts per million, or milligrams per liter (mg/L)

ppq = parts per quadrillion, or picograms per liter (ρg/L)

ppt = parts per trillion, or nanograms per liter (ηg/L)

TT = Treatment Technique

1 = Field Measurement

2 = All values below the detection limit were calculated as zeros for the purpose of determining the average.

3 = The MCL for Gross Beta is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.

4 = Unregulated contaminant monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.

SYNTHETIC ORGANIC CONTAMINANTS

Contaminant	Units	MCL	MCLG	Phx Municipal Water System: Lowest Detected Level	Phx Municipal Water System: Highest Detected Level	Phx Municipal Water System: Highest Detected Average[2]	North Valley Water System: Lowest Detected Level	North Valley Water System: Highest Detected Level	North Valley Water System: Highest Detected Average[2]	Major Sources in Drinking Water
2,4-Dichlorophenoxy (2,4-D)	ppb	70	70	ND	ND	ND	ND	ND	ND	Runoff from herbicide used on row crops.
2,4,5-TP (Silvex)	ppb	50	50	ND	ND	ND	ND	ND	ND	Residue of banned herbicide.
Alachlor	ppb	2	0.0	ND	ND	ND	ND	ND	ND	Runoff from herbicide used on row crops.
Atrazine	ppb	3	3	ND	ND	ND	ND	ND	ND	Runoff from herbicide used on row crops.
Benzo(a)pyrene (PAH)	ppt	200	0.0	ND	ND	ND	ND	ND	ND	Leaching from linings of water storage tanks and distribution line.
Carbofuran	ppb	40	40	ND	ND	ND	ND	ND	ND	Leaching of soil fumigant used on rice and alfalfa.
Chlordane	ppb	2	0.0	ND	ND	ND	ND	ND	ND	Residue of banned termiticide.
Dalapon	ppb	200	200	ND	ND	ND	ND	ND	ND	Runoff from herbicide used on rights of way.
Di(2-ethylhexyl)adipate	ppb	400	400	ND	ND	ND	ND	ND	ND	Discharge from chemical factories.
Di(2-ethylhexyl)phthalate	ppb	6	0.0	ND	0.6	0.3	ND	ND	ND	Discharge from rubber and chemical factories.
Dibromochloropropane (DBCP)	ppt	200	0.0	ND	ND	ND	ND	ND	ND	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples and orchards.
Dinoseb	ppb	7	7	ND	ND	ND	ND	ND	ND	Runoff from herbicide used on soybeans and vegetables.
Diquat	ppb	20	20	ND	ND	ND	ND	ND	ND	Runoff from herbicide use.
Dioxin (2,3,7,8-TCDD)	ppq	30	0.0	ND	10	5	ND	ND	ND	Emissions from waste incineration and other combustion; Discharge from chemical factories.
Endothall	ppb	100	100	ND	ND	ND	ND	ND	ND	Runoff from herbicide use.
Endrin	ppb	2	2	ND	ND	ND	ND	ND	ND	Residue of banned insecticide.
Ethylene dibromide (EDB)	ppt	50	0.0	ND	ND	ND	ND	ND	ND	Discharge from petroleum refineries.
Glyphosate	ppb	700	700	ND	ND	ND	ND	ND	ND	Runoff from herbicide use.
Heptachlor	ppt	400	0.0	ND	ND	ND	ND	ND	ND	Residue of banned termiticide.
Heptachlor epoxide	ppt	200	0.0	ND	ND	ND	ND	ND	ND	Breakdown of heptachlor.
Hexachlorobenzene (HCB)	ppb	1	0.0	ND	ND	ND	ND	ND	ND	Discharge from metal refineries and agricultural chemical factories.
Hexachlorocyclopentadiene	ppb	50	50	ND	ND	ND	ND	ND	ND	Dicharge from chemical factories.
Lindane (g-BHC)	ppt	200	200	ND	ND	ND	ND	ND	ND	Runoff/leaching from insecticide used on cattle, lumber, gardens.
Methoxychlor	ppb	40	40	ND	ND	ND	ND	ND	ND	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock.
Oxamyl (Vyadate)	ppb	200	200	ND	ND	ND	ND	ND	ND	Runoff/leaching from insecticide used on apples, potatoes and tomatoes.
PCBs (Polychlorinated biphenyls)	ppt	500	0.0	ND	ND	ND	ND	ND	ND	Runoff from landfills; Discharge of waste chemicals.
Pentachlorophenol	ppb	1	0.0	ND	ND	ND	ND	ND	ND	Discharge from wood preseving factories.
Picloram	ppb	500	500	ND	ND	ND	ND	ND	ND	Herbicide runoff.
Simazine	ppb	4	4	ND	ND	ND	ND	ND	ND	Herbicide runoff.
Toxaphene	ppb	3	0.0	ND	ND	ND	ND	ND	ND	Runoff/leaching from insecticide used on cotton and cattle.

UNREGULATED SYNTHETIC ORGANIC CONTAMINANTS[4]

Contaminant	Units	MDL	MCLG	Lowest Detected Level	Highest Detected Level	Highest Detected Average[2]	Lowest Detected Level	Highest Detected Level	Highest Detected Average[2]
Aldicarb	ppm	0.0005	NA	ND	ND	ND	ND	ND	ND
Aldicarb sulfoxide	ppm	0.0005	NA	ND	ND	ND	ND	ND	ND
Aldicarb sulfone	ppm	0.0008	NA	ND	ND	ND	ND	ND	ND
Aldrin	ppm	NA	NA	ND	ND	ND	ND	ND	ND
Butachlor	ppm	NA	NA	ND	ND	ND	ND	ND	ND
Carbaryl	ppm	NA	NA	ND	ND	ND	ND	ND	ND
Dicamba	ppm	NA	NA	ND	ND	ND	ND	ND	ND
Dieldrin	ppm	NA	NA	ND	ND	ND	ND	ND	ND
3-Hydrocarbofuran	ppm	NA	NA	ND	ND	ND	ND	ND	ND
Methomyl	ppm	NA	NA	ND	ND	ND	ND	ND	ND
Metolachlor	ppm	NA	NA	ND	ND	ND	ND	ND	ND
Metribuzin	ppm	NA	NA	ND	ND	ND	ND	ND	ND
Propachlor	ppm	NA	NA	ND	ND	ND	ND	ND	ND

INORGANIC CONTAMINANTS

Contaminant	Units	MCL	MCLG	Phx Municipal Water System: Lowest Detected Level	Phx Municipal Water System: Highest Detected Level	North Valley Water System: Lowest Detected Level	North Valley Water System: Highest Detected Level	Major Sources in Drinking Water
Antimony	ppb	6	6	ND	1.1	ND	ND	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.
Arsenic	ppb	50	NA	ND	16	ND	17	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Asbestos	MFL	7	7	ND	ND	NA	NA	Decay of asbestos cement water mains; Erosion of natural deposits.
Barium	ppm	2	2	ND	0.14	ND	0.03	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Beryllium	ppb	4	4	ND	0.1	ND	0.1	Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries.
Cadmium	ppb	5	5	ND	0.2	ND	ND	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; runoff from waste batteries and paints.
Chromium	ppb	100	100	ND	56	ND	7.3	Discharge from steel and pulp mills; Erosion of natural deposits.
Copper	ppm	AL=1.3	1.3	ND	0.02	ND	0.02	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.
Cyanide	ppb	200	200	ND	ND	ND	ND	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories.
Fluoride	ppm	4	4	0.19	1	0.46	0.8	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Lead	ppb	AL=15	0.0	ND	ND	ND	0.0011	Corrosion of household plumbing systems; Erosion of natural deposits.
Mercury (inorganic)	ppb	2	2	ND	0.2	ND	ND	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland.
Nitrate (as Nitrogen)	ppm	10	10	ND	7.5	ND	1.5	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Nitrite (as Nitrogen)	ppm	1	1	ND	ND	ND	ND	Runoff from fertilizer use; Leaching from septic tanks; sewage; Erosion of natural deposits.
Selenium	ppb	50	50	ND	3.4	ND	ND	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.
Thallium	ppb	2	0.5	ND	ND	ND	ND	Leaching from ore-processing sites; Discharge from electronic, glass and drug factories.
Sodium	ppm	NA	NA	22.9	221	ND	52	
Sulfate	ppm	NA	NA	7.5	252	ND	25	
Corrosivity Chemical Analysis								
Alkalinity	ppm	NA	NA	75	271	212	255	
Hardness / Calcium	ppm	NA	NA	49	222	85	129	
Langlier Index (measure of corrosivity)	NA	NA	NA	-0.7	0.6	-0.3	0.5	
pH [1]	NA	NA	NA	7.3	8.4	7	8.1	
Temperature [1]	oC	NA	NA	13	32	26	28	
Total Dissolved Solids (TDS)	ppm	NA	NA	228	982	302	376	

About Nitrate: Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.