

# 2009 ANNUAL DRINKING WATER QUALITY REPORT FOR PUBLIC WATER SYSTEM NAME: CITY OF AVONDALE PUBLIC WATER SYSTEM NUMBER: AZ 04 088



*Esta es información importante. Si no la pueden leer, necesitan que alguien se la traduzca.*

We are pleased to present to you this year's water quality report.  
Our constant goal is to provide you with a safe and dependable supply of drinking water.

## GENERAL INFORMATION ABOUT DRINKING WATER

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV-AIDS or other immune system disorders, some elderly, and infants can be particularly at risk of infections. These people should seek advice about drinking water from their health care providers. For more information about contaminants and potential health effects, or to receive a copy of the U.S. Environmental Protection Agency (EPA) and the U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and microbiological contaminants call the EPA Safe Drinking Water Hotline at 1-800-426-4791.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it 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:

- ◆ **Microbial contaminants**, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- ◆ **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.
- ◆ **Pesticides and herbicides** that may come from a variety of sources, such as agriculture, urban stormwater runoff, and residential uses.
- ◆ **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and also may come from gas stations, urban stormwater runoff, and septic systems.
- ◆ **Radioactive contaminants**, that can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the Arizona Department of Environmental Quality prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

## OUR WATER SOURCE(S)

Our water source is the West Salt River Valley Sub-Basin aquifer. If we used purchased water, this report is required to include water quality data for the purchased water with this report. Source Water Assessments on file with the Arizona Department of Environmental Quality are available for public review. If a Source Water Assessment is available, you may obtain a copy of it by contacting the Arizona Source Water Coordinator at (602) 771-4641.

Source Water Assessment Report provides a screening-level evaluation of potential contamination that **could** occur. It does not mean that the contamination has occurred or will occur. We can use this information to evaluate the need to improve our current water treatment capabilities and prepare for future contamination threats. This can help us ensure that quality finished water is delivered to your homes. In addition, the source water assessment results provide a starting point for developing a source water protection plan.

Potential sources of contamination in our source water area come from: **surface water intrusion to unprotected wells.**

## SOURCE WATER ASSESSMENT

The Arizona Department of Environmental Quality (ADEQ) has performed an evaluation of the City of Avondale's sources of water to public water systems in Arizona. This evaluation determines the degree to which the source of water is protected. Arizona's Source Water Assessment Program was approved by the EPA in November 1999. Based on the information currently available on the hydrogeologic settings of and the adjacent land uses that are in the specified proximity of the drinking water sources, ADEQ has given a low risk designation for the degree to which this public water system drinking water source is protected. A low risk designation indicates that most source water protection measures are either already implemented, or the hydrogeology is such that the source water protection measures will have little impact on protection.

## TERMS AND ABBREVIATIONS

To help you understand the terms and abbreviations used in this report, we have provided the following definitions:

- ◆ Parts per million (ppm) or Milligrams per liter (mg/L) - one part per million corresponds to one minute in two years or a single penny in \$10,000.
- ◆ Parts per billion (ppb) or Micrograms per liter (µg/L) - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.
- ◆ Parts per trillion (ppt) or Nanograms per liter (nanograms/L) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.
- ◆ Parts per quadrillion (ppq) or Picograms per liter (picograms/L) - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.
- ◆ Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.
- ◆ Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- ◆ Action Level (AL) - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- ◆ Action Level Goal (ALG) - The "Goal" is the level of a contaminant in drinking water below which there is no known or expected risk to health. The ALG allows for a margin of safety.
- ◆ Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

*(continued on page 2)*



## TERMS AND ABBREVIATIONS *(continued from page 1)*

- ◆ **Maximum Contaminant Level Goal (MCLG)** - The “Goal” is 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 “Maximum Allowed” is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- ◆ **Maximum Residual Disinfectant Level Goal (MRDLG)**: The level of a drinking water disinfectant, below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- ◆ **Maximum Residual Disinfectant Level (MRDL)**: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- ◆ **Running Annual Average (RAA)**: An average of monitoring results for the previous 12 calendar months.

## WATER QUALITY DATA

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The State of Arizona requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. Some of our data, though representative, may be more than one year old.

### MICROBIOLOGICAL CONTAMINANTS

*These tables show the results of our monitoring for the period of January 1 to December 31, 2009 unless otherwise noted.*

Contaminant	MCL	No. of Samples taken in 2009	MCLG	Unit	Result	Violation	Likely Source of Contamination
Total Coliform Bacteria for Systems that collect > 40 samples per month	No more than 5% of monthly samples can be positive	960	0	Absent or Present	0	No	Naturally present in the environment

### RADIONUCLIDES

Contaminant	MCL	MCLG	Units	Low Range	High Range	Average Detected	Violation	Likely Source of Contamination
Beta/photon emitters	Trigger level=15	0	pCi/l	3.1	5.6	4	No	Decay of natural and man-made deposits
Alpha emitters	15	0	pCi/l	1.5	5.1	3	No	Erosion of natural deposits
Combined radium	5	0	pCi/l	0.3	1	.05	No	Erosion of natural deposits
Uranium	30	0	ppb	1.4	4.4	3	No	Erosion of natural deposits
Radon	300	N/A	pCi/l	14	223	130	No	Radon is a naturally-occurring radioactive gas that may cause cancer, and may be found in drinking water and indoor air.

### LEAD AND COPPER

Contaminant	AL	ALG	Units	90th Percentile	Number of Sites over AL	Violation	Sample Date/Year	Likely Source of Contamination
Copper	1.3	1.3	ppm	0.212	30	No	2007	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead	15	0	ppb	0	30	No	2007	Corrosion of household plumbing systems, erosion of natural deposits

### DISINFECTANTS

	MRDL	MRDLG	Units	Low Range	High Range	Average Detected	Violation	Likely Source of Contamination
Chlorine	4	4	ppm	0.63	1.66	1.11	No	Water additive used to control microbes

### DISINFECTION BY-PRODUCTS

Contaminant	MCL	MCLG	Units	Low Range	High Range	Average Detected	Violation	Sample Date/Year	Likely Source of Contamination
Haloacetic Acids (HAA)	0.06	N/A	ppm	0.002	0.004	0.002	No	2009	By-product of drinking water disinfection
Total Trihalomethanes (TTHM)	0.08	N/A	ppm	0.002	0.044	0.011	No	2009	By-product of drinking water disinfection

### INORGANIC CONTAMINANTS

Contaminant	MCL	MCLG	Units	Low Range	High Range	Average Detected	Violation	Likely Source of Contamination
Arsenic	10	0	ppb	2	8	5	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Asbestos	7	7	MFL	0	0.20	0.20	No	Decay of asbestos cement water mains; erosion of natural deposits
Barium	2	2	ppm	0.02	0.19	0.12	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium	0.100	0.100	ppm	0.005	0.011	0.007	No	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride	4	4	ppm	0.013	1.16	0.40	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (as Nitrogen)	10	10	ppm	2	9	5	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (as Nitrogen)	1	1	ppm	0.100	0.100	0.100	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	0.05	0.05	ppm	0.003	0.011	0.007	No	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines

### SYNTHETIC ORGANIC CONTAMINANTS, INCLUDING PESTICIDES AND HERBICIDES

Contaminant	MCL	MCLG	Units	Low Range	High Range	Average Detected	Violation	Likely Source of Contamination
Dibromochloropropane	200	0	ppt	20	27	20	No	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
Pentachlorophenol	1	0	ppb	0.40	0.40	0.40	No	Discharge from wood preserving factories

### VOLATILE ORGANIC CONTAMINANTS

Contaminant	MCL	MCLG	Units	Low Range	High Range	Average Detected	Violation	Likely Source of Contamination
Xylenes	10	10	ppm	0.0005	0.001	0.001	No	Discharge from petroleum factories; discharge from chemical factories

### UNREGULATED CONTAMINANTS

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. The following contaminants were tested for in 2001, 2003, and 2008 but not found:

Acetochlor, Alachlor, Metolachlor, acetochlor ethane sulfonic acid (ESA), Acetochlor oxanilic acid (OA), Alachlor ESA, Alachlor OA, 2,4-Dinitrotoluene, Metolachlor ESA, Metolachlor OA, Nitrobenzene, N-nitroso-di-n-butylamine (NDBA), N-nitroso-diethylamine (NDEA), N-nitrosodimethylamine (NDMA), N-nitroso-di-n-propylamine (NDPA), N-nitrosomethylethylamine (NMEA), N-nitrosopyrrolidine (NPYR), 1,3-dinitrobenzene, hexahydro-1,3,5-trinitro-1,3,5-triazine; 2,4,6-trinitrotoluene; 2,2',4,4',5,5'-hexabromobiphenyl; 2,2',4,4',6-pentabromodiphenyl ether; 2,2',4,4',5,5'-hexabromodiphenyl ether; 2,2',4,4'-tetrabromodiphenyl ether; 2,2',4,4',5-pentabromodiphenyl ether; dimethoate; and terbufos sulfone.

### SECONDARY CONTAMINANTS

Secondary standards are non-enforceable guidelines for contaminants that may cause cosmetic effects or aesthetic effects in drinking water. EPA recommends these standards but does not require water systems to comply.

Contaminant	Secondary Standard	MCLG	Units	Level Detected/Range	Violation
Grains per Gallon	N/A	N/A	Gr/gal	21	No
Hardness (Total)	N/A	N/A	ppm	351	No
Iron	0.3	N/A	ppm	0.05	No
pH	6.5 - 8.5	N/A	ppm	8	No
Sodium	250	N/A	ppm	104	No
Sulfate	250	N/A	ppm	73	No
Total Dissolved Solids	500	N/A	ppm	624	No

## PUBLIC INFORMATION NOTICE

**Cyanide.** The City of Avondale is required to monitor Avondale drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. The City is required to monitor for Cyanide every three years. During the monitoring period 2007 – 2009, the City of Avondale did not monitor or test for Cyanide and therefore cannot be sure of the quality of your drinking water during that time. The City has resumed monitoring for this contaminant at the required frequency. Some people who drink water containing cyanide well in excess of the maximum contaminant level over many years could experience nerve damage or problems with their thyroid. Although the absence of monitoring creates uncertainty about the concentration of Cyanide in the drinking water during the 2007 – 2009 testing period, Avondale has not

detected Cyanide above safe drinking water levels in sampling periods prior to or after 2007 – 2009. Because Avondale is now performing the required monitoring for Cyanide, it is not necessary for consumers to use an alternative water supply as a result of the missed Cyanide monitoring during 2007-2009. Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail. Please contact Esmie Avila in the City of Avondale Public Works Department at (623) 333-4422 if you have questions about this notice.

### HEALTH EFFECTS INFORMATION ABOUT THE TABLES ON PAGES 2 AND 3

**Arsenic.** Due to the variation of the arsenic concentration, the City is providing the following statements as required by the US Environmental Protection Agency (EPA): If **arsenic** is less than the MCL, your drinking water meets EPA's standards. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems. Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system and may have an increased risk of getting cancer.

**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, and detected nitrate levels are above 5 ppm, you should ask advice from your health care provider.

**Radon.** Radon is a radioactive gas that you cannot see, taste, or smell. It is found throughout the United States. Radon can move up through the ground and into a home through cracks

and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. For additional information, call your state radon program or call EPA's Radon Hotline (800-SOS-RADON).

**Lead.** Infants and young children are typically more vulnerable to **lead** in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested. Flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the EPA *Safe Drinking Water Hotline* at 1-800-426-4791.

*Please contact Esmie Avila at (623) 333-4422 for more information about the annual drinking water quality report and what you can do to help protect your drinking water sources. Council meetings are held every first and third Monday of the month. Public meeting notices are posted on the City's web site at [www.avondale.org](http://www.avondale.org) and outside of the Avondale City Hall building, located at 11465 W. Civic Center Drive, Avondale.*

### TO LEARN MORE ABOUT WATER

- ◆ **United States Environmental Protection Agency**  
(Safe Drinking Water Hotline: (800) 426-4791  
[www.epa.gov/safewater](http://www.epa.gov/safewater)
- ◆ **Arizona Department of Environmental Quality**  
(602) 771-2300  
[www.adeq.state.az.us/environ/water/index.html](http://www.adeq.state.az.us/environ/water/index.html)
- ◆ **Maricopa County Environmental Services Department**  
(602) 506-6666  
[www.maricopa.gov/ENVSVC/](http://www.maricopa.gov/ENVSVC/)

- ◆ **WaterSense**  
[www.epa.gov/watersense](http://www.epa.gov/watersense)



- ◆ **Tap into Quality**  
[www.tapintoquality.com](http://www.tapintoquality.com)



- ◆ **Arizona Municipal Water Users Association (AMWUA)**  
[www.amwua.org](http://www.amwua.org)



**For after hours emergencies regarding water quality, water main breaks, sewer stoppages and overflows, contact the Avondale Public Works Department at (623) 333-4400.**

*In the past, the City has provided the water quality report in calendar format and mailed it to each address in Avondale. In an effort to reduce printing and mailing costs, a limited supply of the water quality calendar will be printed and will be available this summer. Should you wish to reserve a copy for yourself, please contact Esmie Avila at the Avondale Public Works Department at (623) 333-4422 or by email at [eavila@avondale.org](mailto:eavila@avondale.org).*

***We want you, our valued customers, to be informed about the services we provide and the quality of water we deliver to you every day.***

