

2011 WATER QUALITY REPORT

METRO-HUB SERVICE AREA



May 2012

Metro Water Delivers Safe Drinking Water

Metro Water District is pleased to report that the water we deliver to your tap meets all safe drinking water standards. This is the 14th annual Metro Water District Water Quality Report, which is required by the Federal Government under the Safe Drinking Water Act. We believe customers who are well informed about their water supply are our best allies in supporting improvements necessary to maintain the highest drinking water standards.

Where does your water come from?

The drinking water in Metro's Hub service area is groundwater from the northeast portion of the Tucson Basin aquifer. Our aquifer was created primarily from mountain runoff and storm water infiltrating beneath the ground along Sabino Canyon and Tanque Verde Creeks.

Metro Hub's five active wells pump water from the local aquifer. Depth to water ranges from 53 to 93 feet. Water from wells is placed in storage tanks or reservoirs and is then pressurized to move underground through pipes to reach your home.

While water is made up of hydrogen and oxygen, this life-giving liquid also contains many naturally occurring minerals. Such minerals affect the taste and hardness of your water. The make-up of water varies only slightly from one well to another in the Hub service area. Unfortunately, human-caused and naturally occurring contaminants can also be found in water. This is why the Safe Drinking Water Act exists.

How do you know your water is safe?

Metro Water District routinely checks its water for contaminants. The Arizona Department of

Environmental Quality Monitoring Assistance Program (MAP) and the District collected 329 samples during 2011 to meet Federal and State regulations. The District also tested for constituents that may be regulated in the near future.

How is your water tested?

Trained staff collects water samples from wells, storage facilities, points in the distribution system, and residents' homes. The samples are analyzed by State licensed laboratories. The test results are reported to the District and to the State of Arizona. The District works closely with the Arizona Department of Environmental Quality (ADEQ) to ensure all water quality standards are met.

What happens if the water tested indicates contamination?

If a constituent is found that does not comply with Safe Drinking Water Standards, the District is required by Federal and State regulations to notify customers within the affected service area. Notification may be made by letter and/or through the news media.

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Pictured above are the Hub No. 1 Treatment System Vessels that remove arsenic, a naturally-occurring mineral in the Southwest, and ensure compliance with the Safe Drinking Water Act.

EPA Warns Nationally that...

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 from infections. These people should seek advice about drinking water from their health care providers.

EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at **1-800-426-4791**.

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If a serious situation occurs that may affect the health and well-being of our customers, the District would do whatever is necessary to warn you and provide an alternate source of safe drinking water.

What contaminants might be detected?

The table on the following page shows the 13 regulated contaminants were detected in the Metro Water-Hub service area in 2011, or during the most recent sampling period. 27 regulated contaminants were sampled by the District and ADEQ in 2011, as required by Safe Water Drinking Standards. The District also sampled 43 unregulated contaminants.

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. More information about contaminants and potential health effects can be obtained by calling the U.S. Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791

The source of our tap drinking water is from wells. As water travels through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up dissolved substances resulting from the presence of plants, animals or from human activity.

Contaminants that may be present in our water include microbial, such as viruses and bacteria; inorganics, such as salts and metals; pesticides & herbicides; organic chemical contaminants, both synthetic and volatile; and radioactive contaminants

Where do contaminants come from?

These contaminants can be manmade or naturally-occurring. Microbial contaminants may come from sewage treatment plants, septic systems, residential uses, agricultural, livestock operations, and wildlife. Inorganic contaminants can result from urban stormwater runoff, industrial or domestic wastewater discharges, or mining. Pesticides & herbicides may come from many sources, such as agriculture, urban runoff and residential use. Radioactive contaminants can be naturally-occurring or from mining activities. Organic chemical contaminants can come from landfills, gas stations, urban runoff and septic systems.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water that is provided by public water systems.

Source Water Assessment

Arizona Department of Environmental Quality (ADEQ) completed a source water assessment for the five wells used by Metro-Hub. The source water assessment reviewed if adjacent land uses may pose a potential risk to groundwater wells. Land uses such as gas stations, landfills, dry cleaners, agriculture fields, wastewater treatment plants, and mining activities were not found near the wells. Since ADEQ identified no adjacent land uses, the risk to the wells was ranked low by ADEQ from land uses potentially affecting each well. We can use this information to evaluate the need to improve our current treatment capabilities and prevent contamination threats.

Residents can help further protect the water sources by taking hazardous household chemicals to hazardous material collection centers and limiting pesticide and fertilizer use. For more information on the source water assessment, call Michael Block, District Hydrologist at 575-8100 or visit ADEQ's source water assessment and protection unit website at www.azdeq.gov/viron/water/dw/swap.html

2011 Detected Regulated Contaminants Report for Metro's Hub Service Area

Water Quality Parameter	Levels Detected by Metro Water Highest & Lowest		Highest Level Allowed (EPA's MCL)*	Ideal Goal (EPA's MCLG)*	Units*	Potential Sources of Contaminant
Regulated by Testing in the Distribution System						
Total Trihalomethanes (TTHM)	8.9	5.2	80	0	ppb	Disinfection by-product of drinking water chlorination.
Chlorine Residual	0.44	0.38	4.0	4.0	ppm	By-product of drinking water chlorination.
Regulated by Testing at Where the Water Enters the Distribution System						
Alpha Emitters (2010)	2.3	1.0	15	0	pCi/L	Erosion of natural deposits.
Arsenic	8.8	<2.0	10	0	ppb	Erosion of natural deposits; Runoff from agriculture. For further explanation, see page 4.
Barium (2007)	149	<2	2000	2000	ppb	Erosion of natural deposits; Discharge from well drilling muds; Leaching from bricks and tiles containing barium.
Combined Radium (2010)	0.5	<0.4	5	0	pCi/L	Erosion of natural radioactive deposits.
Fluoride (2010)	1.40	0.61	4	4	ppm	Erosion of natural deposits; Discharge from fertilizer production.
Nitrate (as Nitrogen)	2.4	0.68	10	10	ppm	Runoff from fertilizer use; Leaching from septic tanks; Sewage; Erosion of natural deposits.
Nitrite (as Nitrogen) (2010)	0.15	<0.10	1	1	ppm	Runoff from fertilizer use; Leaching from septic tanks; Sewage; Erosion of natural deposits.
Radium 226 (2010)	0.5	<0.2	3	0	pCi/L	Erosion of natural deposits.
Uranium (2005)	3.4	<0.6	30	0	ppb	Erosion of natural deposits.
Water Quality Parameter	90 th Percentile Level	Maximum Level Detected	EPA Contaminant Action Level (AL)*	EPA Maximum Contaminant Level Goal (MCLG)*	Units	Potential Sources of Contaminant
Regulated by Testing Water from Customer Homes						
Copper	130	150	1,300	1,300	ppb	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.
Lead	3.3	12	15	0	ppb	Corrosion of household plumbing systems; Erosion of natural deposits.

***DEFINITIONS:** EPA - acronym for the U.S. Environmental Protection Agency **MAXIMUM CONTAMINANT LEVEL (MCL)** - The highest level of a contaminant that is allowed in a drinking water. MCLs are set as close to the MCLG as feasible using the best available treatment technology. **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. **ACTION LEVEL (AL)** - The concentration of a contaminant which, if exceeded triggers a treatment or other requirements which a water system must follow. **ppm** - parts per million **ppb** - parts per billion **pCi/L** - picocuries per liter is a measure of the radioactivity in water. A picocurie is 10⁻¹² curies and is the quantity of radioactive material producing 2.22 nuclear transformations per minute.

Help Protect Our Groundwater

Metro Water takes hundreds of water samples each year to ensure we all have safe drinking water. You can help protect our drinking water supply by correctly disposing of household hazardous waste at one of three free disposal sites that are open the first Saturday of each month from 8:00 a.m. to 12:00 noon. The site located nearest you is Tucson Eastside City Hall, 7575 E Speedway Blvd. For a list of disposal site locations and additional information, please call 888-6947.

Voluntary Monitoring in 2011

Metro tests more often for some constituents than required by EPA OR tests for constituents presently not regulated.

Water Quality Parameter	Levels Detected by Metro Water Highest & Lowest		Highest Detected Level Allowed (EPA's MCL)*	Ideal Goal (EPA's MCLG)*	Units*	Potential Sources of Contaminant
Arsenic	9.8	1.7	10	0	ppb	Erosion of natural deposits; Runoff from agriculture. For further explanation, see below.
Vanadium	22	6.7	NA	NA	ppb	Erosion of natural deposits.

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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. **ppb** - One part per billion

Arsenic -

EPA established a new drinking water standard for arsenic in which water providers are to ensure that as of January 2006 no more than 10 parts per billion (ppb) of arsenic can be found in the drinking water delivered to customers.

Metro Water was aware that two of its five wells in the Metro Hub service area would be slightly above the new standard of 10 ppb. Metro Water has complied with the new standards by installing a treatment system at the two well sites in Metro Hub. Since 2006, the treatment systems, along with blending of water, mitigated the arsenic level to below the new standard.

Arsenic is a naturally-occurring mineral. Some people who drink water that contains 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 cancer.

For the compliance testing, 8.8 ppb was the highest level found after treatment.

In addition to the required quarterly testing, Metro Water voluntarily tested twice monthly the treated water from those two wells for arsenic in 2011. During the voluntary sampling to monitor the treatment system in 2011, the treated water from those two wells ranged from 2.0 ppb to 9.8 ppb. Again, with the treatment systems in place and the management of those two wells, Metro Water is in compliance with the new arsenic standard of no more than 10 ppb.

In addition, the District voluntarily monitors the other Metro-Hub service area wells and the Metro-Hub Reservoir quarterly to observe any changes in the arsenic levels within the service area. In 2011, the arsenic levels were between 1.7 ppb and 4.5 ppb at those wells and the reservoir, which is below the 10 ppb MCL.

For more information about your drinking water or this report, please call Theresa Lutz, Metro's Water Quality Specialist, at 575-8100 or email tlutz@metrowater.com

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Water...Use It Wisely

Metro Water District strongly encourages you to use our safe drinking water efficiently. Our groundwater is a precious resource here in the desert that we should use wisely. Listed below are some water-wise ideas.

- Receive \$50 (and save water and money) for installing a graywater or water harvesting system.
- Check regularly for leaks, both inside and outside. A little leak can drain your wallet.
- Change your watering schedule on your drip irrigation and sprinkler systems according to the season.
- Maintain your drip irrigation and sprinkler systems.
- Water with infrequent, deep soaks. Let your plants tell you how often they need to be watered.