

Water 101

Chlorine & Coliform

Continued from Front

Sometimes, just after chlorine is added to the water system in a well or reservoir near your home, you may smell it in your tap water. If you fill a pitcher with this water and let it sit on the counter top or in the refrigerator for an hour, the chlorine smell will disappear.

Coliform Bacteria

Our water quality experts look for coliform bacteria in our drinking water because this common, but normally harmless group of bacteria is often found in the presence of other, disease-causing microorganisms. Monitoring coliform bacteria as an indication of water quality has been common practice for more than 80 years. U. S. Environmental Protection Agency drinking water regulations mandate that no more than 5% of the samples we take each month are positive for coliform bacteria. Typically, none of the more than 250 microbiological samples we collect each month are positive for coliform.

**One milligram per liter is the same as one part per million. See Groundwater Quality Report inside.*

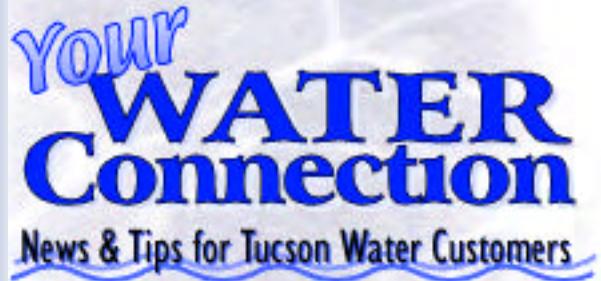
Visit the Tucson Water Web Site at
<http://www.cityoftucson.org/water>

Your Water Connection is produced by Tucson Water. To receive a copy, or to receive this information in Spanish, call 791-4331 or mail your request to: Tucson Water, Customer Information, P.O. Box 27210, Tucson, AZ 85726-7210.

City of Tucson TTY number: 791-2639



Si usted desea este documento escrito en español, por favor, llame al 791-4331.



Water 101

Your Water at Home— Part III: Chlorine & Coliform

Water 101 is presenting an on-going series about aspects of water quality and how they affect customers' daily lives. This month we'll talk about **chlorine** and **coliform bacteria**.

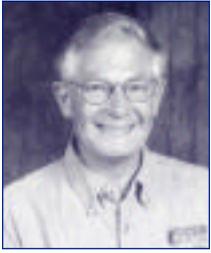
Chlorine

Just as water is essential to life, chlorine is essential to safe water. It is the most common water disinfectant used in the world. Chlorine destroys bacteria and other organic materials in water to ensure drinking water is safe to drink. The use of chlorine is a major reason why water-borne disease is so rare in the United States. It's used throughout the Tucson Water system.

Tucson Water works to maintain a chlorine residual in your drinking water of about 0.8mg/L*. The U.S. Environmental Protection Agency primary standard for free chlorine in drinking water is 4/mg/L*.

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October 2003 <http://www.cityoftucson.org/water/>



On the Water Front

Major Power Outage Won't Leave Us High and Dry

Would a loss of the power grid in Tucson, like the one that hit the north-eastern U.S. recently, mean an interruption in water delivery? I've been asked that question many times since the power outage caused Cleveland's water system to shut down leaving thousands of citizens without water for several days.

If we had a massive loss of power in Tucson, we'd probably have some water use restrictions to make sure supplies were available for public health and fire hydrants. That means we'd ask you to cut back or stop irrigation and non-critical water use. But we wouldn't be without water completely.

Tucson Water has a contingency plan to deal with short or long-term power outages and it's reviewed annually to make sure we are prepared to meet any unexpected problems.

Delivering with Gravity

We use gravity to move water from reservoirs to customers in as many places in the water system as possible throughout the water system. So, for the most part, only customers living at higher elevations would be at risk of reduced or interrupted water service during a power outage. We keep a supply of portable generators that can be installed quickly at critical water facilities. These can be used to refill reservoirs, which in turn will continue to supply water via gravity feed.

Natural Gas Provides Backup

Most of our pumps are electrical, but in the past few years, we've begun adding natural gas powered pumps to a number of wells and other facilities. In addition to a backup in case electricity is lost, gas gives us flexibility on the cost of energy, letting us select the best combination of gas and electricity to operate facilities in the most inexpensive way. At the Clearwater Facility, the source of about half our water, many of the wells and half the pumps are powered by natural gas.

Control and Communication

Our computer control systems have an emergency, uninterruptible power supply and many facilities can be operated manually. We use a variety of communications systems, from two-way radios, to microwaves and cell phones, which give us numerous backups in case of a power outage. All this planning and backup helps assure continued water service for you and your family. It also helps us with water security making it much more difficult for anyone to disrupt our water service intentionally.

So next time your electricity goes off at home, remember, Tucson Water will keep the water flowing to your home or business. We'll be there, making sure you have enough quality water for yourself and your family.

David V. Modeer
Director, Tucson Water

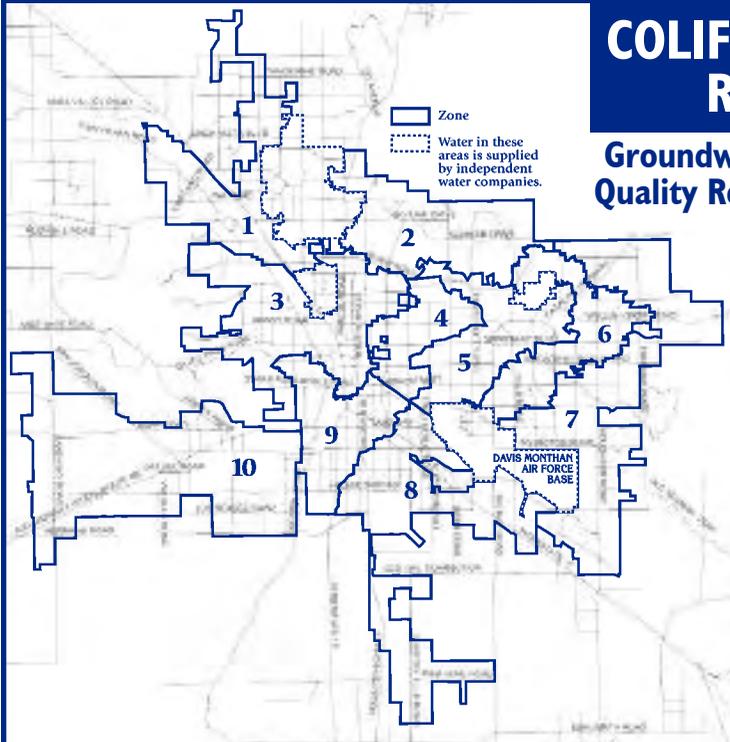
Clearwater Quality Report - September 2003

45*	Sodium (ppm)
265.3	Mineral Content (ppm)
96*	Hardness (ppm)
8.0	pH (units)
Neg*	Coliform Bacteria
0.89	Chlorine level average (ppm)
85.6	Temp (deg F)

** Values for August 2003*

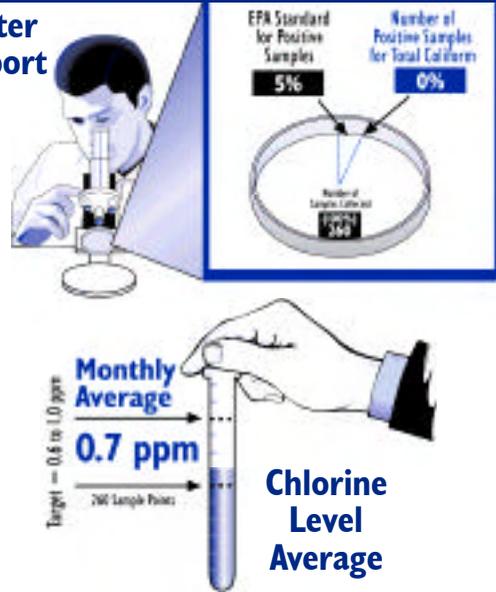
GROUNDWATER QUALITY REPORT - July 2003

Water Quality Zone		1	2	3	4	5	6	7	8	9	10	System Wide
Sodium (ppm)	Average Range	50 47-52	48 46-50	45 26-60	37 30-47	40 30-47	41 34-47	33 22-44	43 41-45	46 41-55	42 42-42	42 22-60
Mineral Content (ppm)	Average Range	420 205-613	281 266-307	315 194-428	229 189-268	252 196-284	261 209-288	240 179-292	341 296-442	285 214-464	217 214-224	277 179-613
Hardness (ppm)	Average Range	262 153-385	118 104-132	131 88-198	92 77-102	105 89-119	109 84-125	116 82-144	173 136-253	94 75-128	77 75-78	119 75-385
pH (units)	Average Range	7.4 7.0-8.0	7.9 7.4-8.2	7.5 7.1-8.1	7.7 7.2-8.1	7.6 6.9-8.1	7.7 6.9-8.1	7.6 7.0-8.0	7.4 7.3-7.6	7.7 7.2-8.1	7.7 7.2-7.8	7.6 6.9-8.2
Temperature (deg F)	Average Range	87 79-94	90 87-93	88 80-99	89 81-96	88 77-94	88 74-94	88 84-92	89 83-96	91 83-99	92 88-93	89 74-99



COLIFORM BACTERIA TESTING RESULTS - July 2003

Groundwater Quality Report



**“PPM” means one part per million;
1 ppm = 1 teaspoon in 1,302 gallons**

To give you a more accurate measurement of the water quality in your neighborhood, the Tucson Water service area has been divided into 10 zones based on differences in water pressure and water quality. For a detailed description of the zone boundaries, call 791-4331.

With the exception of chlorine and coliform bacteria, none of the water quality parameters reported here have U.S. Environmental Protection Agency primary standards set for them. For more information about primary and secondary water quality standards, visit Tucson Water’s web site at www.cityoftucson.org/water.

Time to Maintain the Mains!

As temperatures and water use drop, Tucson Water will begin working once again to make our water system



more efficient. This will be the fourth year of Maintaining the Mains, which will begin in selected neighborhoods in late September. More than 220 miles of mains have been “maintained” since the program began in 2000.

Tucson Water crews from the Operations and Maintenance Division will be opening fire hydrants to flush water at high speeds through the water mains. Traveling at high speed, the water “scours” your neighborhood water system and removes naturally occurring sand, silt, and sediments that can affect the quality of your water and reduce the useful life of mains, valves, and other water system facilities.

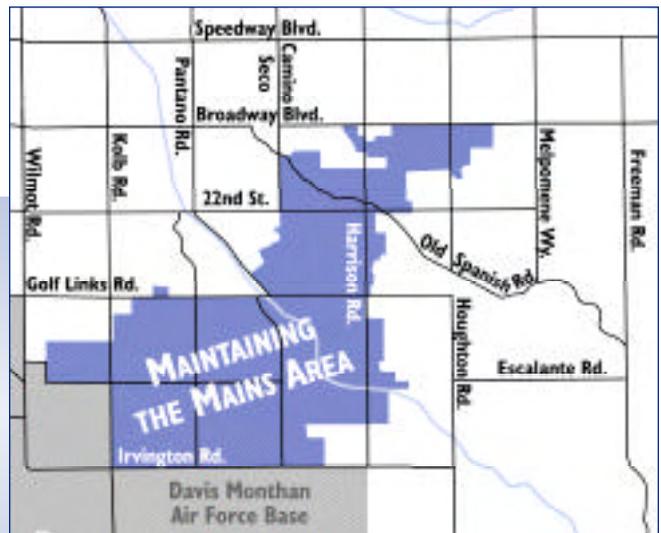
This also gives us a chance to coordinate with area Fire Departments to ensure the proper operation of neighborhood fire hydrants. Britt Klein, who directs the program for Tucson Water says, “Our annual Maintaining the Mains program helps keep your water system reliable and ensures you continue to get high quality water.”

– Maintaining the Mains in Your Neighborhood

There may be a temporary reduction (just a few minutes) in your water pressure while Tucson Water crews are flushing in your neighborhood. To minimize any inconvenience, we only flush the mains at night, from 7:00 PM to 5:00 AM. If you have questions about Maintaining the Mains, please call 791-4331.

We’re Flush with Facts about Maintaining the Mains

- Dates: September 2003-April 2004
- Times: 7:00 PM - 5:00 AM
- Locations: See map
- Benefits: Improves the operation and extends the life of your water system. Maintains the quality of the water flowing through the mains.



Maintaining the Mains 2003-2004 will take place in the blue-shaded area shown above.