

ANNUAL  
**WATER REPORT**

*Water testing  
performed in 2010*

QUALITY



*Presented By* \_\_\_\_\_  
**City of Dayton  
Water Department**

## Quality First Quality

Once again we are proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2010. As in years past, we are committed to delivering the best-quality drinking water possible. To that end, we remain vigilant in meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education while continuing to serve the needs of all of our water users. Thank you for allowing us to continue providing you and your family with quality drinking water.

We encourage you to share your thoughts with us on the information contained in this report. Should you ever have any questions or concerns, we are always available to assist you.

## Community Participation

You are welcome and encouraged to participate and voice your concerns about your drinking water by attending Dayton city council meetings on the first Monday of each month at approximately 6:00 p.m. (or 5 minutes after the school board meeting) in the City Council Chambers at the Dayton Municipal Building located at 399 First Avenue.

## Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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 (800) 426-4791 or <http://water.epa.gov/drink/hotline>.

## Substances That Could Be in Water

In order to ensure that tap water is safe to drink, the U.S. EPA and the Tennessee Department of Environment and Conservation prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

**Microbial Contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

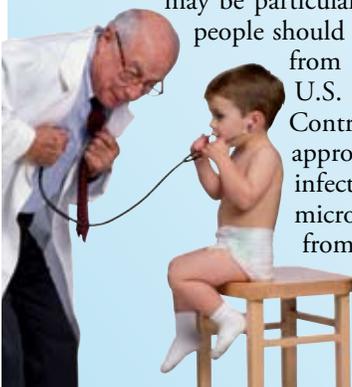
**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

**Pesticides and Herbicides**, which 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 by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.



## Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent according to government estimates).

The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Further, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to \$1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, check out their Web site at [www.nrdc.org/water/drinking/bw/exesum.asp](http://www.nrdc.org/water/drinking/bw/exesum.asp).

## Billing Information

**B**udget Billing – Budget billing begins in October of each year and ends in September. You must have been at a current residence for at least one (1) year. Please see the Service Department at the Billing office for more information or call (423) 775-8416.

Deposits are applied as a credit to your account after two (2) years if your account is in good standing. If you move out of our service area before two (2) years of service, you may pick up your deposit refund after paying your final bill.

Warm Neighbors – Customers have the option to sign up for a \$1.00 donation on their utility bill. This fund is for those in need of help on their utility bills. This fund is handled through We Care.

## Where Does My Water Come From?

The City of Dayton Water System relies on surface water from the Tennessee River. The river pump station is located on the Chickamauga Lake Reservoir. To learn more about our lakes and watershed on the Internet, go to the U.S. EPA's Surf Your Watershed at [www.epa.gov/surf](http://www.epa.gov/surf).

The water plant treats your water using disinfection and filtration to remove or reduce harmful contaminants that may come from the source water. The raw water is treated as follows: alum, caustic soda, sodium permanganate, and sodium hypochlorite (bleach for disinfection) are added to the raw water. These chemicals react with smaller particles in the water to form larger particles called floc. The floc then settles out in the sedimentation basins before the water passes through the filters. After the filtering process, more hypochlorite is added along with fluoride and sodium phosphate (a corrosion inhibitor). The Dayton Water Treatment Plant treated more than 950 million gallons of water to serve a population of approximately 20,500 people in 2010.

## Source Water Assessment

The Tennessee Association of Utility Districts (TAUD) has conducted a source water assessment for the public water systems in the State of Tennessee. The goal of the assessment was to determine the water systems' vulnerabilities to possible source water contamination. The assessment determined that our surface water source (the Tennessee River) is most vulnerable to historic and present-day land-use activities, including agriculture, light industry, and commercial transportation along the railroad and highway routes. A copy of the assessment is available for viewing at the City of Dayton Water Department or the City of Dayton Water Treatment Plant, or visit the water plant's Web page at [daytontn.net](http://daytontn.net).

## Questions?

For more information about this report, or for any questions relating to your drinking water, please contact the City of Dayton Water Department at (423) 775-1818 or the Water Treatment Plant by calling (423) 775-8415 or by writing to this address: PO Box 226, Dayton, Tennessee, 37321.



## Why do I get this report each year?

Community water system operators are required by federal law to provide their customers with an annual water quality report. The report helps people make informed choices about the water they drink. It lets people know what contaminants, if any, are in their drinking water and how these contaminants may affect their health. It also gives the system operators a chance to tell customers what it takes to deliver safe drinking water.

## Why does my water sometimes look “milky”?

The “milky” look is caused by tiny air bubbles in the water. The water in the pipes coming into your home or business is under pressure, so gasses (the air) are dissolved and trapped in the pressurized water as it flows into your glass. As the air bubbles rise in the glass, they break free at the surface, thus clearing up the water. Although the milky appearance might be disconcerting, the air bubbles won't affect the quality or taste of the water.

## How can I keep my pet's water bowl germ free?

Veterinarians generally recommend that water bowls be washed daily with warm, soapy water – normally when you change the water. Scour the corners, nooks, and crannies of the water dish using a small scrub brush. In addition, once a week put water bowls into the dishwasher to sanitize them with hot water. In most situations, disinfectants like bleach are not needed; warm, soapy water is all you need to keep your pet's water clean and safe.

## How much water is used during a typical shower?

The Federal Energy Policy Act set a nationwide regulation that limits showerheads to a maximum flow of 2.5 gallons per minute (GPM). Showerheads made before 1980 are rated at 5 GPM. Since the average shower is estimated to last 8.2 minutes, the old showerheads use 41 gallons of water while the newer, low-flow showerheads use only about 21 gallons.

## Is it okay to use hot water from the tap for cooking and drinking?

No, always use cold water. Hot water is more likely to contain rust, copper, and lead from household plumbing and water heaters. These substances can dissolve into hot water faster than they do into cold water, especially when the faucet has not been used for an extended period of time.

## How many contaminants are regulated in drinking water?

The U.S. EPA regulates over 80 contaminants in drinking water. Some states may choose to regulate additional contaminants or to set stricter standards, but all states must have standards at least as stringent as the U.S. EPA's.

## Lead and Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Dayton Water System is responsible for providing high-quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

### WATER QUALITY PARAMETERS FOR 2010 (AVERAGE DAILY TEST RESULTS)

#### DAYTON WATER PLANT

Substance (unit of measure)	Units	Avg./Day	Range
Alkalinity	mg/l	54	30 - 68
Hardness	mg/l	69	36 - 84
pH	SU	7.2	6.8 - 7.7
Temperature	C	17.8	5.0 - 29.0
Raw Turbidity	NTU	4.6	1.5 - 27.1

## About Our Violation

As a result of an administrative oversight in October 2010, we neglected to submit a summary report for *Cryptosporidium* results as required by the National Primary Drinking Water Regulations. At no time did this incident pose a threat to public health and safety, nor did it have any impact on the high-quality drinking water provided to our customers. Upon notice, the requirement was promptly met.

## What Are PPCPs?

When cleaning out your medicine cabinet, what do you do with your expired pills? Many people flush them down the toilet or toss them into the trash. Although this seems convenient, these actions could threaten our water supply.

Recent studies are generating a growing concern over pharmaceuticals and personal care products (PPCPs) entering water supplies. PPCPs include human and veterinary drugs (prescription or over-the-counter) and consumer products, such as cosmetics, fragrances, lotions, sunscreens, and house cleaning products. Over the past five years, the number of U.S. prescriptions increased 12 percent to a record 3.7 billion, while nonprescription drug purchases held steady around 3.3 billion. Many of these drugs and personal care products do not biodegrade and may persist in the environment for years.

The best and most cost-effective way to ensure safe water at the tap is to keep our source waters clean. Never flush unused medications down the toilet or sink. Instead, check to see if the pharmacy where you made your purchase accepts medications for disposal, or contact your local health department for information on proper disposal methods and drop-off locations. You can also go on the Web at [www.Earth911.com](http://www.Earth911.com) to find more information about disposal locations in your area.

## Sampling Results

During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chlorine (ppm)	2010	[4]	[4]	2.3	2.0–2.9	No	Water additive used to control microbes
Fluoride (ppm)	2010	4	4	1.03	0.23–1.41	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2010	60	NA	26.8	16.5–45.4	No	By-product of drinking water disinfection
Nitrate (ppm)	2010	10	10	0.46	0.46–0.46	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2010	80	NA	29.8	10.9–56.4	No	By-product of drinking water disinfection
Total Organic Carbon (ppm)	2010	TT	NA	1.45	1.28–1.60	No	Naturally present in the environment
Turbidity <sup>1</sup> (NTU)	2010	TT=1	NA	0.28	0.04–0.28	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2010	TT=95% of samples<0.3 NTU	NA	100.0	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2008	1.3	1.3	1.2	3/30	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2008	15	0	10	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

<sup>1</sup> Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

## Definitions

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

**MCL (Maximum Contaminant Level):** 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.

**MCLG (Maximum Contaminant Level Goal):** 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.

**MRDL (Maximum Residual Disinfectant Level):** 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.

**MRDLG (Maximum Residual Disinfectant Level Goal):** 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.

**NA:** Not applicable.

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

**TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.