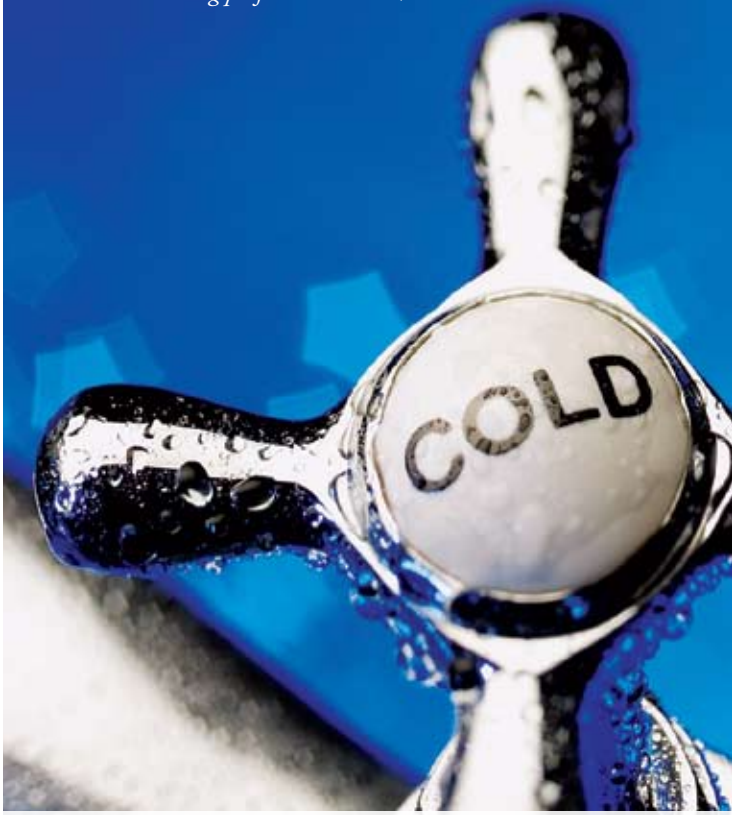
Annual Water Quality Report

Water testing performed in 2007



Presented By:

Public Water Supply
District No.2 of
Jackson County, Missouri

PWS ID#: 1024276

Meeting the Challenge

We are once again proud to present to you our annual water quality report. This edition covers all testing completed from January 1 through December 31, 2007. Over the years, we have dedicated ourselves to delivering drinking water that meets all state and federal drinking water standards. We continually strive to adopt new and better methods for providing the best quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the challenges of source water protection, water conservation and community education while continuing to serve the needs of all our water users.

Please share with us your thoughts about the information in this report. After all, well-informed customers are our best allies.

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.

Where Does My Water Come From?

Public Water Supply District #2 (PWSD #2) purchases water from two sources. The first is Kansas City Water, which draws surface water from the Missouri River and from deep wells in the Missouri River Aquifer. Our second water source is from Independence Water, which draws water from wells located in the Missouri River Alluvial Aquifer.

> **"WELL-INFORMED CUSTOMERS ARE OUR BEST ALLIES.**

How Long Can I Store Drinking Water?

The disinfectant in drinking water will eventually dissipate even in a closed container. If that container housed bacteria prior to filling up with the tap water the bacteria may continue to grow once the disinfectant has dissipated. Some experts believe that water could be stored up to six months before needing to be replaced. Refrigeration will help slow the bacterial growth.

Substances That Could be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting 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.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. We meet on the second Wednesday of every month beginning at 5:00 p.m. at the Water District Office, 6945 Blue Ridge Boulevard, Raytown, Missouri 64133.

Water Conservation

You can play a role in conserving water and saving yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

Questions?

For more information about this report, or for any questions relating to your drinking water, please call Patrick Ertz, Manager, at (816) 353-5550.

Information on the Internet

The U.S. EPA Office of Water (www.epa.gov/watrhome) and the Centers for Disease Control and Prevention (www.cdc.gov) Web sites provide a substantial amount of information on many issues relating to water resources, water conservation and public health. Also, the Missouri Department of Natural Resources has a Web site (http://dnr.missouri.gov/env/wpp/dw-index.htm) that provides complete and current information on water issues in Missouri, including valuable information about our watershed.

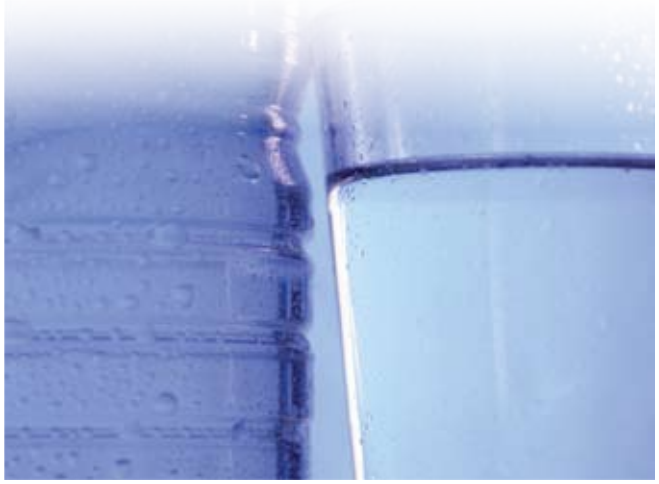
Tap vs. Bottled

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% of bottled water is actually just bottled tap water (40% 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% of all bottled water sold in the United States.

People spend 1,000 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 $1.20. 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.



IDSE Sampling

Under the Stage 2 Disinfectants/Disinfection By-products Rule (D/DBPR), our public water system was required by the U.S. EPA to conduct an evaluation of our distribution system. This is known as an Initial Distribution System Evaluation (IDSE) and is intended to identify locations in our distribution system that have elevated disinfection by-product concentrations. Beginning in 2012, the locations selected for the IDSE may be used for compliance monitoring under Stage 2 DBPR. Disinfection by-products are the result of continuous disinfection of your drinking water and form when disinfectants combine with organic matter that naturally occurs in the source water. Disinfection by-products are grouped into two categories, Total Trihalomethanes (TTHM) and Haloaetic Acids (HAA5). The U.S. EPA sets standards for controlling the levels of disinfectants and disinfectant by-products in drinking water, including both TTHMs and HAA5s.

Radon

Radon is a radioactive gas that occurs naturally in some groundwater. It may pose a health risk when the gas is released from water into air, as occurs during showering, bathing, or washing dishes and clothes. Radon gas released from drinking water is a relatively small part of the total radon in air. Radon is released into homes and groundwater from soil. Inhalation of radon gas has been linked to lung cancer; however, the effects of radon ingested in drinking water are not yet clear. In 2007, Independence Water detected radon at a concentration of 62.3 pCi/L. If you are concerned about radon in your home, tests are available to determine the total exposure level. For additional information on how to have your home tested, call (800) SOS-RADON.

Should I Put a Brick in My Toilet Tank to Save Water?

Toilet flushing uses a lot of water: about 40% of a household's total water usage. Putting something in the toilet tank that takes up space, like a toilet dam or a water filled jug, is a good idea. But putting a brick in the tank is not a good idea; bricks tend to crumble and might damage your toilet.

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. Although all of the substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2007	15	0	0.74	0.74–0.74	No	Erosion of natural deposits
Antimony (ppb)	2007	6	6	1	ND–2	No	Discharge from petroleum refineries; Fire retardants; Ceramics; Electronics; Solder
Atrazine (ppb)	2007	3	3	0.24	ND–1.53	No	Runoff from herbicide used on row crops
Barium (ppm)	2007	2	2	0.052	0.040–0.115	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beta/Photon Emitters[1] (pCi/L)	2007	50	0	4.2	4.2–4.2	No	Decay of natural and man-made deposits
Chlorine (ppm)	2007	[4]	[4]	2.25	1.85–2.59	No	Water additive used to control microbes
Combined Radium (pCi/L)	2007	5	0	0.431	0.431–0.431	No	Erosion of natural deposits
Cyanide (ppb)	2007	200	200	5	ND–30	No	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories
Fluoride (ppm)	2007	4	4	0.60	0.33–0.81	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2007	60	NA	19.9	9.7–28.7	No	By-product of drinking water disinfection
Nitrate (ppm)	2007	10	10	2.13	ND–6.4	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2007	80	NA	9.60	7.45–12.35	No	By-product of drinking water chlorination
Total Organic Carbon (ppm)	2007	TT	NA	2.22	1.51–4.88	No	Naturally present in the environment
Turbidity[2] (NTU)	2007	TT	NA	0.08	0.03–0.42	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2007	TT	NA	96.8	NA	No	Soil runoff
Uranium (ppb)	2007	30	0	0.23	0.23–0.23	No	Erosion of natural deposits

Tap water samples were collected from 30 sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	ACTION LEVEL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE ACTION LEVEL	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2007	1.3	1.3	0.00408	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2007	15	0	1.15	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

IDSE

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Haloacetic Acids [HAA]- IDSE Results (ppb)	2007	9.75	ND–35.1	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes]–IDSE Results (ppb)	2007	6.40	ND–13.2	By-product of drinking water disinfection

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Sodium (ppm)	2007	45.0	20.1–56.3	Naturally occurring
Sulfate (ppm)	2007	110	110–110	Runoff/leaching from natural deposits; Industrial wastes

[1] The MCL for beta particles is 4 mrem/year. U.S. EPA considers 50 pCi/L to be the level of concern for beta particles.
[2] 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.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

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.

pCi/L (picocuries per liter): A measure of radioactivity.

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.