



Water testing performed in 2009

Presented By:



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Maintaining High Standards

Once again we are proud to present our annual water quality report. This report covers all testing performed between January 1, 2009, and December 31, 2009. The events of the past few years have presented many of us with challenges we could not have imagined. Yet in spite of this, we have maintained our high standards in an effort to continue delivering the best quality drinking water possible. There may be other hurdles in the future, but know that we will always stand behind you and the drinking water we work diligently to provide.

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

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 www.epa.gov/safewater/hotline/.



Community Participation

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

What's Your Water Footprint?

You may have some understanding about your carbon footprint, but how much do you know about your water footprint? The water footprint of an individual, community, or business is defined as the total volume of freshwater that is used to produce the goods and services that are consumed by the individual or community or produced by the business. For example, 11 gallons of water are needed to irrigate and wash the fruit in one half-gallon container of orange juice. Thirty-seven gallons of water are used to grow, produce, package, and ship the beans in that morning cup of coffee. Two hundred and sixty-four gallons of water are required to produce one quart of milk, and 4,200 gallons of water are required to produce two pounds of beef.

According to the U.S. EPA, the average American uses about 100 gallons of water daily. In fact, in the developed world, one flush of a toilet uses as much water as the average person in the developing world allocates for an entire day's cooking, washing, cleaning, and drinking. The annual American per capita water footprint is about 8,000 cubic feet; twice the global per capita average. With water use increasing six-fold in the past century, our demands for freshwater are rapidly outstripping what the planet can replenish.

To check out your own water footprint, go to www.h2oconserve.org, or visit www.waterfootprint.org to see how the water footprints of other nations compare.

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.



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.

Water Conservation

You can play a role in conserving water and save 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 a 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.

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 (www.dnr.mo.gov) that provides complete and current information on water issues in Missouri, including valuable information about our watershed.

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.

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.

Source Water Assessment

A Source Water Assessment Plan (SWAP) is now available at our office. This plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area and a determination of the water supply's susceptibility to contamination by the identified potential sources.



According to the Source Water Assessment Plan, our water system had a susceptibility rating of "medium." If you would like to review the Source Water Assessment Plan, please feel free to contact our office during regular office hours.

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. We are 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.

Radon Testing

Radon is a radioactive gas that occurs naturally in some ground water. 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 ground water 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 2009, Independence Water detected radon at a concentration of 72.1 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.

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 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 allows 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									
				Kansas City Water		Independence Water			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Atrazine (ppb)	2009	3	3	0.37	ND–2.19	NA	NA	No	Runoff from herbicide used on row crops
Barium (ppm)	2009	2	2	0.015	0.007–0.026	0.042	0.038–0.046	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beta/Photon Emitters¹ (pCi/L)	2009	50	0	NA	NA	5.9	5.9–5.9	No	Decay of natural and man-made deposits
Chloramines (ppm)	2009	[4]	[4]	NA	NA	2.19	1.67–2.44	No	Water additive used to control microbes
Chlorine (ppm)	2009	[4]	[4]	2.30	1.83–2.79	NA	NA	No	Water additive used to control microbes
Combined Radium (pCi/L)	2009	5	0	NA	NA	0.023	0.023–0.023	No	Erosion of natural deposits
Fluoride (ppm)	2009	4	4	0.90	0.67–1.19	0.21	0.19–0.23	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate (ppm)	2009	10	10	1.4	ND–2.8	NA	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrite (ppm)	2009	1	1	0.14	ND–0.14	0.17	0.17–0.17	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Total Coliform Bacteria (% positive samples)	2009	5% positive monthly samples	0	1.1%	NA	1%	NA	No	Naturally present in the environment
Total Organic Carbon (ppm)	2009	TT	NA	2.13	1.47–5.30	1.69	1.6–1.8	No	Naturally present in the environment
Turbidity² (NTU)	2009	TT	NA	0.16	0.03–0.16	NA	NA	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2009	TT	NA	100	NA	NA	NA	No	Soil runoff
Uranium (ppb)	2009	30	0	NA	NA	0.13	0.13–0.13	No	Erosion of natural deposits
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)	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		

INITIAL DISTRIBUTION SYSTEM EVALUATION³

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Kansas City Water		Independence Water		TYPICAL SOURCE
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	
Haloacetic Acids [HAA]–IDSE Results (ppb)	2009	19.2	14.9–29.1	9.9	ND–17.1	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes]–IDSE Results (ppb)	2009	8.7	3.8–13.9	3.8	ND–3.8	By-product of drinking water disinfection

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

²Turbidity 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.

³We were 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. Disinfection by-products (e.g., HAAs and TTHMs) result from continuous disinfection of drinking water and form when disinfectants combine with organic matter that naturally occurs in the source water.

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.

