Annual WATER QUALITY REPORT

Reporting Year 2013

JACKSON COUNTY PUBLIC WATER SUPPLY DISTRICT NO. 2

Presented By

Public Water Supply District #2

PWS ID#: MO1024276

There When You Need Us

We are once again proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2013. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please remember that we are always available to assist you should you ever have any questions or concerns about your water.

Where Does My Water Come From?

Public Water Supply District #2 customers are fortunate because we enjoy an abundant water supply from two sources. The first is Kansas City Water, which draws surface water from the Missouri River and from deep wells in the Missouri Aquifer. Our second water source is Independence Water, which draws water from wells located in the Missouri River Alluvial Aquifer. Combined, we provide roughly 420 million gallons of clean drinking water every year.

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.

Community Participation

You are invited to participate in our public meetings and voice your concerns about your drinking water. We meet the second Wednesday of each month beginning at 5 pm at the Water District Office, 6945 Blue Ridge Boulevard, Raytown.

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.

Lead in Home Plumbing

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.

Benefits of Chlorination

Disinfection, a chemical process used to control disease-causing microorganisms by killing or inactivating them, is unquestionably the most important step in drinking water treatment. By far, the most common method of disinfection in North America is chlorination.

Before communities began routinely treating drinking water with chlorine (starting with Chicago and Jersey City in 1908), cholera, typhoid fever, dysentery, and hepatitis A killed thousands of U.S. residents annually. Drinking water chlorination and filtration have helped to virtually eliminate these diseases in the U.S. Significant strides in public health are directly linked to the adoption of drinking water chlorination. In fact, the filtration of drinking water plus the use of chlorine is probably the most significant public health advancement in human history.

How chlorination works:

Potent Germicide Reduction in the level of many disease-causing microorganisms in drinking water to almost immeasurable levels.

Taste and Odor Reduction of many disagreeable tastes and odors like foul-smelling algae secretions, sulfides, and odors from decaying vegetation.

Biological Growth Elimination of slime bacteria, molds, and algae that commonly grow in water supply reservoirs, on the walls of water mains, and in storage tanks.

Chemical Removal of hydrogen sulfide (which has a rotten egg odor), ammonia, and other nitrogenous compounds that have unpleasant tastes and hinder disinfection. It also helps to remove iron and manganese from raw water.

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 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.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Patrick Ertz, Water District 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 (www.dnr.mo.gov) that provides complete and current information on water issues in Missouri, including valuable information about our watershed.

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.

If you would like to review the Source Water Assessment Plan, please feel free to contact our office during regular office hours. You can also contact Independence Water and Kansas City Water for information on their own assessments.

Radon

Radon is a radioactive gas that you cannot see, taste, or smell. It is found throughout the U.S. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. You should pursue radon removal for your home if the level of radon in your air is 4 pCi/L or higher. There are simple ways to fix a radon problem that are not too costly. For additional information, call your state radon program or call U.S. EPA's Radon Hotline at (800) SOS-RADON.

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.

We participated in the 3rd stage of the EPA's Unregulated Contaminant Monitoring Regulation (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if EPA needs to introduce new regulatory standards to improve drinking water quality. Any UCMR3 detections are shown in the data tables in this report. Contact us for more information on this program.

REGULATED SUBSTANCES

				Public Water Supply District #2		Independence Water		Kansas City Water			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2013	15	0	NA	NA	4.3	4.3–4.3	NA	NA	No	Erosion of natural deposits
Atrazine (ppb)	2013	3	3	NA	NA	NA	NA	0.22	ND–2.1	No	Runoff from herbicide used on row crops
Barium (ppm)	2013	2	2	NA	NA	0.059	0.059–0.059	0.011	0.006–0.024	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beta/Photon Emitters[1] (pCi/L)	2013	50	0	NA	NA	6.4	6.4–6.4	NA	NA	No	Decay of natural and man-made deposits
Chloramines (ppm)	2013	[4]	[4]	NA	NA	2.02	1.52–2.34	2.27	1.47–3.07	No	Water additive used to control microbes
Chromium (ppb)	2013	100	100	NA	NA	0.93	0.93–0.93	3	3–4	No	Discharge from steel and pulp mills; Erosion of natural deposits
Cyanide (ppb)	2013	200	200	NA	NA	NA	NA	2	ND–13	No	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories
Fluoride (ppm)	2013	4	4	NA	NA	0.22	0.22–0.22	0.72	0.14–1.11	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA]–Stage 2 (ppb)	2013	60	NA	NA	NA	1.8	1.8–1.8	14.8	6.9–35.5	No	By-product of drinking water disinfection
Nitrate (ppm)	2013	10	10	NA	NA	NA	NA	1.39	0.08–5.65	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Selenium (ppb)	2013	50	50	NA	NA	NA	NA	1.9	ND–3.2	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
TTHMs [Total Trihalomethanes]–Stage 2 (ppb)	2013	80	NA	NA	NA	2.44	2.44–2.44	8.3	2.4–48.9	No	By-product of drinking water disinfection
Total Coliform Bacteria (# positive samples)	2013	1 positive monthly sample	0	1	NA	NA	NA	NA	NA	No	Naturally present in the environment
Total Organic Carbon (ppm)	2013	TT	NA	NA	NA	1.9	1.9–1.9	NA	NA	No	Naturally present in the environment
Turbidity[2] (NTU)	2013	TT=1 NTU	NA	NA	NA	NA	NA	0.29	0.04–0.29	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2013	TT=95% of samples <0.3 NTU	NA	NA	NA	NA	NA	100	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)	2013	1.3	1.3	2.2	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2013	15	0	0	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

DISINFECTION BYPRODUCTS	SAMPLE POINT	MONITORING PERIOD	LRAA	RANGE LOW-HIGH	UNIT	MCL	MCLG	TYPICAL SOURCE
(HAA5)	DBPDUAL-01	2013	10	0–16.8	ppb	60	0	By-product of drinking water disinfection
(HAA5)	DBPDUAL-02	2013	9	0–20	ppb	60	0	By-product of drinking water disinfection
(HAA5)	DBPDUAL-03	2013	10	0–14.5	ppb	60	0	By-product of drinking water disinfection
(HAA5)	DBPDUAL-04	2013	0	0–0	ppb	60	0	By-product of drinking water disinfection
TTHM	DBPDUAL-01	2013	5	0–8.05	ppb	80	0	By-product of drinking water disinfection
TTHM	DBPDUAL-02	2013	5	0–6.29	ppb	80	0	By-product of drinking water disinfection
TTHM	DBPDUAL-03	2013	4	0–8.16	ppb	80	0	By-product of drinking water disinfection
TTHM	DBPDUAL-04	2013	3	0–0	ppb	80	0	By-product of drinking water disinfection

OTHER REGULATED SUBSTANCES (INDEPENDENCE WATER)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Radon (pCi/L)	2013	300	0	130	130–130	No	Naturally occurring

UNREGULATED CONTAMINANT MONITORING RULE (UCMR3)

CONTAMINANT AND UNIT OF MEASUREMENT	DATE OF SAMPLING (MO./YR.)	AVERAGE RESULT	RANGE OF RESULTS	LIKELY SOURCE OF CONTAMINATION
Chromium, Hexavalent (ppb)	1/23/13	3	0.73–3	Naturally-occurring element; used in making steel and other alloys
Molybdenum (ppb)	10/16/13	3.89	2.68–3.89	Naturally-occurring element found in ores and present in plants, animals and bacteria
Strontium (ppb)	10/16/13	239	169–239	Naturally-occurring element
Vanadium (ppb)	4/22/13	3.73	1.47–3.73	Naturally-occurring elemental metal

[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.