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ANNUAL
WATER
QUALITY
REPORT

Water testing performed in 2006



PWS ID#: 2010533

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. We meet the first and third Monday of each month beginning at 7 p.m. at City Hall, 101 West Reed Street, Moberly, Missouri.

Information on the Internet

The U.S. EPA Office of Water (www.epa.gov/watrhme) 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.state.mo.us/homedrn.htm) that provides complete and current information on water issues in Missouri, including valuable information about our watershed.

Continuing Our Commitment

Once again we proudly present our annual water quality report. This edition covers all testing completed from January 1 through December 31, 2006. We are pleased to tell you that our compliance with all state and federal drinking water laws remains exemplary. As in the past, we are committed to delivering the best quality drinking water. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

For more information about this report, or for any questions relating to your drinking water, please call Keith Phipps, Director of Public Utilities, at (660) 269-8705, ext. 2046.

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.



Water Treatment Process

The treatment process consists of a series of steps. First, raw water is drawn from our water source and sent to an up-flow basin, where chemicals are added. The addition of these substances cause small particles to adhere to one another (called floc), making them heavy enough to settle into a basin from which sediment is removed. Chlorine is then added for disinfection, and fluoride is added to prevent tooth decay. At this point, the water is filtered through layers of silicate sand. As smaller, suspended particles are removed, turbidity disappears and clear water emerges. Chlorine is added again as precaution against any bacteria that may still be present. (We carefully monitor the amount of chlorine, adding the lowest quantity necessary to protect the safety of your water without compromising taste.) Finally, the water is pumped to underground reservoirs, water towers and into your home or business.

Where Does My Water Come From?

The City of Moberly Water Treatment Plant draws water from Sugar Creek Reservoir, a lake covering approximately 365 acres. The Moberly Water Treatment Plant was constructed in 1972. Our treatment facility provides roughly 620 million gallons of clean drinking water every year.

Contamination from Cross-Connections

Cross-connections that could contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems) or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continually jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed all industrial, commercial, and institutional facilities in the service area to make sure that all potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test each backflow preventer to make sure that it is providing maximum protection.

For more information, visit the Web site of the American Backflow Prevention Association (www.abpa.org) for a discussion on current issues.

Naturally Occurring Bacteria

The simple fact is, bacteria and other microorganisms inhabit our world. They can be found all around us: in our food; on our skin; in our bodies; and, in the air, soil, and water. Some are harmful to us and some are not. Coliform bacteria are common in the environment and are generally not harmful themselves. The presence of this bacterial form in drinking water is a concern because it indicates that the water may be contaminated with other organisms that can cause disease. Throughout the year, we tested 192 samples (16 samples every month) for coliform bacteria. In that time, none of the samples came back positive for the bacteria. Federal regulations now require that public water that tests positive for coliform bacteria must be further analyzed for fecal coliform bacteria. Fecal coliforms are present only in human and animal waste. Because these bacteria can cause illness, it is unacceptable for fecal coliforms to be present in water at any concentration. Our tests indicate no fecal coliform is present in our water.



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. 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 sample was taken.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2006	2	2	0.0443	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (ppm)	2006	4	4	1.10	1.05–1.15	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2006	60	NA	41.53315	20.9–71.7	No	By-product of drinking water disinfection
Nitrate + Nitrite (ppm)	2006	10	10	0.12	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2006	80	NA	56.34716	20.9–92.9	No	By-product of drinking water chlorination
Total Organic Carbon (ppm)	2006	TT	NA	4.13	2.39–7.75	No	Naturally present in the environment
Turbidity ¹ (NTU)	2006	TT	NA	0.27	0.06–0.27	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2006	TT > 95	NA	100	NA	No	Soil runoff

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)	2004	1.3	1.3	0.264	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2004	15	0	9.2	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

¹ 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. We monitor it because it is a good indicator of the effectiveness of our filtration system. During the reporting year, a minimum of 100% of all samples taken to measure turbidity met water quality standards.

Table 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.

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.

Substances That Might Be in Drinking 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.

Is It Safe to Drink Water from a Garden Hose?

Substances used in vinyl garden hoses to keep them flexible can get into the water as it passes through the hose. These chemicals are not good for you, nor are they good for your pets. Allow the water to run for a short time in order to flush the hose before drinking or filling your pet's drinking containers. Hoses made with food-grade plastic will not contaminate the water. Check your local hardware store for this type of hose.

