

A close-up photograph of water being poured from a glass pitcher into a clear glass. The water is captured mid-pour, creating a dynamic splash and bubbles. The background is a blurred wooden surface.

ANNUAL WATER QUALITY REPORT

REPORTING YEAR 2018



Presented By
Board of Public Utilities

Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2018. 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 should you ever have any questions or concerns about your water.

Information

Water quality reports for previous years can be accessed at the BPU website: www.mcphersonpower.com.

Board meetings occur bimonthly at the BPU administrative office and are open for public attendance.

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>.



Where Does My Water Come From?

An underground aquifer called the Equus Beds is the only source of McPherson's water supply. The aquifer underlies portions of a four-county area, which is about 900,000 acres in size. Water is drawn from 12 underground wells located in and around the City of McPherson.

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.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please contact the general manager's office at 401 West Kansas Avenue in McPherson. Contact may also be made by phone at (620) 245-2525 or on our website at www.mcphersonpower.com.

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 at (800) 426-4791 or at www.epa.gov/safewater/lead.

“ We remain vigilant in delivering the best-quality drinking water ”

Corrosion Control

In 2015, after receiving a permit from the Kansas Department of Health and Environment (KDHE), the BPU began injecting an approved corrosion inhibitor/

sequestrant for copper corrosion control to the water system. The product is injected at 0.5 to 1.0 ppm to mitigate the slightly corrosive effect of BPU's water on

copper. Because BPU's water system has very little copper, this effort is done primarily to control corrosion of copper from homeowners' plumbing. Results from the injection of the corrosion inhibitor continue to be monitored with periodic tests as directed by KDHE.



BY THE NUMBERS

The number of Olympic-sized swimming pools it would take to fill up all of Earth's water.

800
TRILLION

1
CENT

The average cost for about 5 gallons of water supplied to a home in the U.S.

The amount of Earth's water that is salty or otherwise undrinkable, or locked away and unavailable in ice caps and glaciers.

99%

71% The amount of Earth's surface that's covered by water.

The average daily number of gallons of total home water use for each person in the U.S.

50
GALLONS

330
MILLION

The amount of water on Earth in cubic miles.

Test Results

The tables below list all the drinking water contaminants that were detected during the reporting period. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. The U.S. EPA or the State of Kansas requires the utility to monitor for certain contaminants less often than once per year because the concentrations of these contaminants 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 third stage of the EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program in 2017 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.

REGULATED SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	HIGHEST VALUE	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2016	15	0	1.7	1.7	No	Erosion of natural deposits
Arsenic (ppb)	2017	10	0	4.1	4.1	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Atrazine (ppb)	2017	3	3	0.063	0.063	No	Runoff from herbicide used on row crops
Barium (ppm)	2017	2	2	0.20	0.20	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chromium (ppb)	2017	100	100	1.6	1.6	No	Discharge from steel and pulp mills; Erosion of natural deposits
Nitrate (ppm)	2018	10	10	3.7	3.7	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Selenium (ppb)	2017	50	50	6.4	6.4	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
TTHMs [Total Trihalomethanes] (ppb)	2018	80	NA	6.1	3.8–6.1	No	By-product of drinking water disinfection
Tetrachloroethylene (ppb)	2018	5	0	1.5	ND–1.5	No	Discharge from factories and dry cleaners
Tap water samples were collected for lead and copper analyses from sample sites throughout the community							
LEAD AND COPPER	MONITORING PERIOD	90TH PERCENTILE	RANGE LOW-HIGH	UNIT	AL	SITES OVER AL	TYPICAL SOURCE
Copper, Free	2018	0.91	0.024–1.5	ppm	1.3	1	Corrosion of household plumbing
Lead	2018	1.6	1.1–4.6	ppb	15	0	Corrosion of household plumbing

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	HIGHEST VALUE	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alkalinity, Total (ppm)	2017	300	NA	260	260	No	Naturally occurring
Calcium (ppm)	2017	200	NA	120	120	No	Erosion of natural deposits
Chloride (ppm)	2017	250	NA	59	59	No	Runoff/leaching from natural deposits
Conductivity (µS/cm)	2017	1,500	NA	780	780	No	Substances that form ions when in water
Corrosivity (Units)	2017	Non-corrosive	NA	0.71	0.71	No	Natural or industrially influenced balance of hydrogen, carbon, and oxygen in the water; Affected by temperature and other factors
Hardness, Total [as CaCO ₃] (ppm)	2017	400	NA	350	350	No	Naturally occurring
Magnesium (ppm)	2017	150	NA	11	11	No	Naturally occurring
pH (Units)	2017	6.5–8.5	NA	7.8	7.8	No	Naturally occurring
Phosphate (ppm)	2014	NA	NA	0.060	0.060	No	Added for corrosion control
Phosphorus, Total (ppm)	2017	5	NA	0.80	0.80	No	Naturally occurring; Component in cleaning products
Potassium (ppm)	2017	100	NA	2.6	2.6	No	Naturally occurring; Found in water softeners
Silica (ppm)	2017	50	NA	34	34	No	Naturally occurring as sand, quartz, sandstone, and granite
Sodium (ppm)	2017	100	NA	24	24	No	Naturally occurring; Component of water softeners
Sulfate (ppm)	2017	250	NA	32	32	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2017	500	NA	460	460	No	Runoff/leaching from natural deposits

UNREGULATED CONTAMINANT MONITORING RULE - PART 3 (UCMR3)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	HIGHEST VALUE	RANGE LOW-HIGH	TYPICAL SOURCE
Chlorate (ppb)	2015	36.5	28.1–36.5	Disinfectant by-product
Molybdenum (ppb)	2015	1.26	1.06–1.26	Naturally occurring
Strontium (ppb)	2015	611	606–611	Naturally occurring
Vanadium (ppb)	2015	12.3	11.2–12.3	Naturally occurring

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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

µS/cm (microsiemens per centimeter): A unit expressing the amount of electrical conductivity of a solution.

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected value for TTHMs is reported as the highest LRAA.

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

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).

SMCL (Secondary Maximum Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.

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 housecleaning products. From 2006 to 2010, the number of U.S. prescriptions increased 12 percent to a record 3.7 billion, while nonprescription drug purchases held steady at 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 online (<https://goo.gl/aZPgeB>) to find more information about disposal locations in your area.

Table Talk

Get the most out of the Testing Results data table with this simple suggestion. In less than a minute, you will know all there is to know about your water:

For each substance listed, compare the value in the Amount Detected column against the value in the MCL (or AL or SMCL) column. If the Amount Detected value is smaller, your water meets the health and safety standards set for the substance.

Other Table Information Worth Noting

Verify that there were no violations of the state or federal standards in the Violation column. If there was a violation, you will see a detailed description of the event in this report.

If there is an ND or a less than symbol (<), that means that the substance was not detected (i.e., below the detectable limits of the testing equipment).

The Range column displays the lowest and highest sample readings. If there is an NA showing, that means only a single sample was taken to test for the substance (assuming there is a reported value in the Amount Detected column).

If there is sufficient evidence to indicate from where the substance originates, it will be listed under Typical Source.

