2016 Annual Water Quality Report

St. Louis County/St. Charles County
PWS ID: MO6010716

MISSOURI AMERICAN WATER

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

A Message from the Missouri American Water President

To Our Valued Customers:

We like to say in the water industry that ours is the only utility you ingest. Of course, with that comes the responsibility of producing a product that must be both safe and clean. At Missouri American Water, I'm glad to say that our water is both. The following document spells it out in detail.

Our Annual Water Quality Report serves as a description of the source and quality of your drinking water. It's essentially our company's report card on your local water service, and I'm proud to say that our grades are stellar. Not only do we continue to supply water that meets or exceeds all state and federal water quality regulations, we've been doing so for years. Our surface water plants have won multiple Director's Awards from the American Water Works Association, an honor only a select few surface water treatment plants can claim nationwide each year. To say I'm proud of this accomplishment is an understatement. Our groundwater systems also maintain outstanding water quality.

Beyond being clean and safe, our water is also affordable. At about a penny per gallon, our water is a great value.

I hope you'll take a few minutes and read the following report. It provides important information about your drinking water, its quality, and the testing we've conducted.

We appreciate the opportunity to serve you and look forward to keeping the water flowing for years to come.

Cheryl D. Norton

Cheryl Norton
President

What is a Water Quality Report?

To comply with state and U.S. Environmental Protection Agency (USEPA) regulations, Missouri American Water issues a report annually describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect drinking water sources. Last year, we conducted tests for hundreds of contaminants. This report provides an overview of the most recent water quality data available. It includes details about where your water comes from and what it contains.

If you have any questions about this report or your drinking water, please call our Customer Service Center at (toll-free) (866) 430-0820.

AT LESS THAN A PENNY PER GALLON WATER IS A GREAT VALUE™

About Missouri American Water

Missouri American Water, a subsidiary of American Water (NYSE: AWK), is the largest investor-owned water utility in the state, providing high-quality and reliable water and/or wastewater services to approximately 1.5 million people.

With a history dating back to 1886, American Water is the largest and most geographically diverse U.S. publicly traded water and wastewater utility company. The company employs more than 6,700 dedicated professionals who provide regulated and market-based drinking water, wastewater and other related services to an estimated 15 million people in 47 states and Ontario, Canada. More information can be found by visiting www.amwater.com.

How to Contact Us

For more information regarding this report or any of the other services provided by Missouri American Water, please call our Customer Service Center at (toll-free) (866) 430-0820, or you may visit us at www.missouriamwater.com.

Partnership for Safe Drinking Water Program

Our water treatment plants are members of the Partnership for Safe Water. The Partnership is a national voluntary initiative developed by the Environmental Protection Agency (USEPA) and other water organizations to recognize water suppliers that consistently achieve water treatment standards that surpass USEPA regulatory requirements. Fewer than one percent of water utilities in the U.S. have achieved this recognition.

Source Water Information

Missouri American Water supplies quality drinking water to around 365,000 customers in St. Louis County, St. Charles County and northern Jefferson County. Approximately 80 percent of our surface water comes from the Missouri River, which borders our service area on the north and the west. Nearly 20 percent comes from the Meramec River in south St. Louis County. Both rivers have a plentiful supply of water that responds well to conventional, though rigorous, drinking water treatment processes. Missouri American Water occasionally purchases a small quantity of water from the City of St. Louis Water Division, which also uses the Missouri River as a source of water. For more information about this water supply, contact the City of St. Louis Water Division at (314) 868-5640. More information on your source water is available at http://drinkingwater.missouri.edu/swip/swipmaps/pwssid.htm. To access the information for your water system you will need the State-assigned code (PWSID), which is printed at the top of this report.

Protecting our Water Quality at the Source

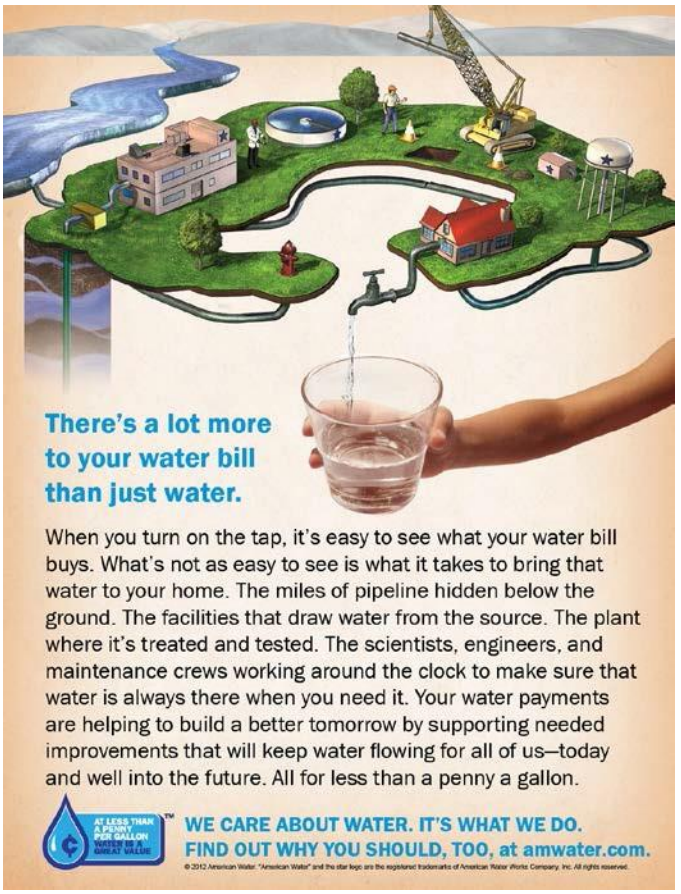
We can all help protect the quality of water coming from our faucets by first protecting the quality of water in our rivers.

We all live in a watershed – an area of land that drains to a waterway. When it rains or snows, water travels across the ground on its journey to a river or stream. Along the way, it picks up any pollutants that may be found on lawns, streets and farmland.

Working together we can minimize these pollutants and protect our rivers, starting with six simple steps.

- Recycle – don't litter.
- Remember that storm inlets drain to rivers – don't pour oil or chemicals in the street.
- Plant native plants. They support wildlife, help preserve our natural diversity and require no fertilizer or herbicides.
- Use lawn chemicals sparingly and follow directions.
- Plant a rain garden to capture runoff from rainwater.
- Join a local stream clean-up team.

Missouri American Water supports river clean-ups, watershed protection programs and environmental events across Missouri. In 2016, Missouri American Water's community outreach program deployed more than 300 employee volunteers to more than 40 community events across the state.



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Water Information Sources

Missouri American Water
www.missouriamwater.com

Missouri Department of Natural Resources
www.dnr.mo.gov

United States Environmental Protection Agency
www.epa.gov/safewater

Safe Drinking Water Hotline: (800) 426-4791

Centers for Disease Control and Prevention
www.cdc.gov

American Water Works Association
www.drinktap.org

Water Quality Association
www.wqa.org

National Library of Medicine/National Institute of Health
www.medlineplus.gov/drinkingwater.html

Substances Expected to be in Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and groundwater wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk.

Contaminants 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, and 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 can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive Contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

For more information about the contaminants and potential health effects, call the USEPA's Safe Drinking Water Hotline at (800) 426-4791.

Special Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the USEPA's Safe Drinking Water Hotline (800) 426-4791.

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. Missouri American Water is 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 http://www.epa.gov/safewater/lead.

To ensure that tap water is of high quality, U.S. Environmental Protection Agency prescribes regulations limiting the amount of certain substances 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.

How to Read the Tables

Missouri American Water conducts extensive monitoring to ensure that your water meets all water quality standards. The most recent results of our monitoring are reported in the following tables. Certain substances are monitored less than once per year because the levels do not change frequently. For help with interpreting these tables, see the "Definitions of Terms" section.

Starting with a **Substance**, read across. **Year Sampled** is the most recent test year. **MCL** shows the highest level of substance (contaminant) allowed. **MCLG** is the goal level for that substance (this may be lower than what is allowed). **Results** represents the measured amount (less is better). **Range** tells the highest and lowest amounts measured. A **Yes** under **Compliance Achieved** means the amount of the substance met government requirements. **Typical Source** tells where the substance usually originates.

Unregulated substances are measured, but maximum contaminant levels have not been established by the government.

Definitions of Terms

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 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 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 contamination.

NA: Not applicable

ND: Not detected

pCi/L (picocuries per liter): Measurement of the natural rate of disintegration of radioactive contaminants in water (also beta particles).

ppm (parts per million): One part substance per million parts water, or milligrams per liter.

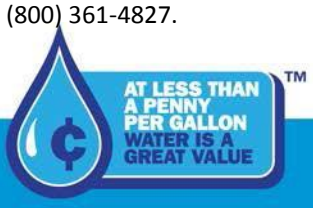
ppb (parts per billion): One part substance per billion parts water, or micrograms per liter.

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.

Water Quality Statement

We are pleased to report that during the past year, the water delivered to your home or business complied with all state and federal drinking water requirements. For your information, we have compiled tables showing the most recent water quality data available. Although all of the substances listed below are under the Maximum Contaminant Level (MCL) set by the USEPA, we feel it is important that you know exactly what was detected and how much of the substance was present in the water. For additional information concerning our results, please contact our customer service department at (toll-free) (866) 430-0820. Monitoring is also done under the USEPA Unregulated Contaminant Monitoring Rule (UCMR). Data is available on the USEPA's web site.

There are many unforeseen and unpredictable factors that may introduce contaminants into our source water. The Missouri Department of Natural Resources routinely monitors all public water supplies to ensure public health is protected. Source Water Assessments have been assembled by the Missouri Department of Natural Resources to evaluate the susceptibility of contamination to our drinking water sources. For more information about these assessments call the Missouri Department of Natural Resources at (800) 361-4827.



Water Quality Results

Regulated Substances (Water Leaving the Treatment Facility)

Substance (units)	Year Sampled	MCL	MCLG	Missouri River Facilities		Meramec River Facilities		Compliance Achieved	Typical Source
				Results	Range Low-High	Results	Range Low-High		
Atrazine (ppb)	2016	3	3	0.1	ND – 0.4	ND	ND	Yes	Runoff from herbicide used on row crops
Chloramines (ppm)	2016	TT	NA	1.7	1.7 - 3.2	1.8	1.8 – 3.1	Yes	Water additive used to control microbes
Fluoride (ppm)	2016	4	4	0.6	0.6 – 0.7	0.6	0.6 – 0.7	Yes	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate (as N) (ppm)	2016	10	10	2.6	2.6 – 3.5	0.2	0.1 – 0.2	Yes	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
Selenium (ppb)	2016	50	50	3	3	ND	ND	Yes	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Total Organic Carbon	2016	TT	NA	1.3	1.3 – 2.0	1.0	1.0 – 2.8	Yes	Naturally present in the environment

Turbidity - A Measure of the Clarity of the Water (Water Leaving the Treatment Facility)

Substance (units)	Year Sampled	MCL	MCLG	Missouri River	Meramec River	Compliance Achieved	Typical Source
				Highest Single Measurement	Highest Single Measurement		
Turbidity (NTU)	2016	TT	NA	0.23	0.12	Yes	Soil runoff

Bacterial Results (In the Distribution System)

Substance (units)	Year Sampled	MCL	MCLG	Highest Percentage Detected	Compliance Achieved	Typical Source
Total Coliform Bacteria	2016	5% Positive Samples	0	0.6%	Yes	Naturally present in the environment

Regulated Substances (In the Distribution System)

Substance (units)	Year Sampled	MCL	MCLG	Results	Range Low-High	Compliance Achieved	Typical Source
Chloramines (ppm)	2016	MRDL = 4	MRDLG = 4	2.8	2.2 – 2.8	Yes	Water additive used to control microbes
HAA5 [Haloacetic Acids] (ppb)	2016	60	NA	29.5	5.4 – 54.3	Yes	By-product of drinking water disinfection
TTHM [Total trihalomethanes] (ppb)	2016	80	NA	57.8	4.7 – 99.9	Yes	By-product of drinking water disinfection

Lead and Copper Results (In the Distribution System)

Substance (units)	Year Sampled	Action Level	MCLG	Number of Samples	90th Percentile	Number of Samples Above Action Level	Typical Source
Copper (ppm)	2016	AL = 1.3	1.3	50	ND	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2016	AL = 15	0	50	3	0	Corrosion of household plumbing systems; Erosion of natural deposits

Unregulated Substances (Water Leaving the Treatment Facility)

Substance (units)	Year Sampled	Missouri River		Meramec River		Typical Source
		Results	Range Low-High	Results	Range Low-High	
1,4-Dioxane (ppb)	2013	0.02	ND – 0.2	0.03	ND – 0.1	Cyclic aliphatic ether; used as a solvent or solvent stabilizer in manufacture and processing of paper, cotton, textile products, automotive coolant, cosmetics and shampoos
Boron (ppm)	2016	0.08	0.08	ND	ND	Naturally-occurring
Calcium (ppm)	2016	25	24 – 26	14	13 – 14	Naturally-occurring
Chlorate (ppb)	2013, 2016	ND	ND	180	150 - 280	By-product of disinfection process; Agricultural defoliant or desiccant; Used in production of chlorine dioxide
Chloride (ppm)	2016	28	27 – 29	31	26 – 36	Naturally-occurring; Runoff from road de-icing, fertilizers, septic tanks, industrial uses
Chromium – 6 (ppb)	2013	1.3	1.0 – 1.4	1.3	0.9 – 1.6	Naturally-occurring element; used in making steel and other alloys; chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation
Magnesium (ppm)	2016	25	25 – 26	14	12 – 15	Naturally-occurring
Potassium (ppm)	2016	5	5 – 6	ND	ND	Naturally-occurring
Silica (ppm)	2016	11	10 – 11	ND	ND	Naturally-occurring
Sodium (ppm)	2016	50	49 – 51	14	12 – 16	Naturally-occurring
Strontium (ppb)	2016	200	200	ND	ND	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
Sulfate (ppm)	2016	165	164 – 167	16	16 – 17	Naturally-occurring; Mining or industrial waste
Testosterone (ppt)	2013	ND	ND	0.04	ND – 0.2	Androgenic steroid naturally produced in the human body; and used in pharmaceuticals
Vanadium (ppb)	2016	4	3 – 4	ND	ND	Naturally-occurring elemental metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst

Unregulated Substances (In the Distribution System)

Substance (units)	Year Sampled	Missouri River		Meramec River		Typical Source
		Results	Range Low-High	Results	Range Low-High	
Chlorate (ppb)	2013	ND	ND	221	90 - 370	By-product of disinfection process; Agricultural defoliant or desiccant; used in production of chlorine dioxide
Chromium-6 (ppb)	2013	1.3	0.9 – 1.5	1.2	0.9 – 1.6	Naturally-occurring element; used in making steel and other alloys; chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation
Molybdenum (ppb)	2013	2.8	1.2 – 4.2	1.0	ND – 1.9	Naturally-occurring element found in ores and present in plants, animals and bacteria; commonly used form molybdenum trioxide used as a chemical reagent
Strontium (ppb)	2013	163	90 - 220	40	30 - 79	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
Vanadium (ppb)	2013	2.9	1.3 – 4.4	1.0	0.4 – 1.6	Naturally-occurring elemental metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst

Additional Water Quality Research

Cryptosporidium is a microbial pathogen found in surface water throughout the United States. Although *Cryptosporidium* can be removed through commonly used filtration methods, USEPA issued a rule in January 2006 that requires systems with higher *Cryptosporidium* levels in their source water to provide additional treatment. An initial round of monitoring showed elevated levels of *Cryptosporidium* in the Missouri River, so in 2011 we completed a year-long Demonstration of Performance project, approved by the MDNR, which shows that our current treatment process is effective at removing *Cryptosporidium*. A second round of monitoring began in 2015, which has shown elevated levels of *Cryptosporidium* on the Meramec River. Preliminary tests show that the treatment in place for the Meramec River is also effective at removing *Cryptosporidium*. We continue to monitor our processes to ensure all applicable standards are met.

Missouri American Water performs annual radionuclide testing in the Missouri River in North St. Louis County. Results are available at http://www.amwater.com/ccr/stlouisregion_rads.pdf. Additionally, 2015 tests conducted on the water leaving all four St. Louis County treatment facilities found no radiologicals present.

Substances Tested For But Not Detected (Water Leaving the Treatment Facility)

1,1,1-Trichloroethane
1,1,2-Trichloroethane
1,1-Dichloroethene
1,2-Dibromoethane (EDB)
1,2,4-Trichlorobenzene
1,2-Dibromo-3-chloropropane
1,2-Dichlorobenzene
1,2-Dichloroethane
1,2-Dichloropropane
1,4-Dichlorobenzene
2,4,5-T
2,4,5-TP (Silvex)
2,4-D
2,4-DB
3,5-Dichlorobenzoic acid
3-Hydroxycarbofuran
Acifluorfen
Alachlor
Aldicarb
Aldicarb Sulfone
Aldicarb Sulfoxide
Aluminum – Total
Alpha emitters
Antimony – Total
Aroclor-1016
Aroclor-1221
Aroclor-1232
Aroclor-1242
Aroclor-1248
Aroclor-1254
Aroclor-1260
Arsenic – Total
Barium – Total
Bentazon
Benzene
Benzo(a)pyrene
Beryllium – Total
Bromate
Cadmium – Total
Carbaryl (Sevin)
Carbofuran
Carbon tetrachloride
Chlorobenzene
Chromium – Total
cis-1,2-Dichloroethene
Cobalt – Total
Copper – Total
Cyanide – Total
Dacthal
Dalapon
Di(2-ethylhexyl)adipate
Di(2-Ethylhexyl)phthalate
Dicamba
Dichloroprop
Dinoseb
Diquat
Endothall
Endrin
Ethyl Benzene
gamma-BHC (Lindane)
Glyphosate
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorocyclopentadiene
Iron – Total
Lead – Total
m,p-Xylene
Manganese – Total
Mercury – Total
Methiocarb
Methomyl
Methoxychlor
Methyl tert-Butyl ether (MTBE)
Methylene chloride
Molybdenum – Total
Nickel – Total
Nitrite – N
Oxamyl (Vydate)
o-Xylene
Pentachlorophenol
Perchlorate
Picloram
Radium, Combined
Silver – Total
Simazine (Princep)
Styrene
Technical Chlordane
Tetrachloroethene (PCE)
Thallium – Total
Toluene
Total PCBs
Toxaphene
trans-1,2-Dichloroethene
Trichloroethene (TCE)
Vinyl Chloride
Xylene – Total
Zinc – Total