

2015 Drinking Water Quality Report

City of Washington



May 2016 Volume 18 Issue 1

Our Commitment

We are pleased to present this year's Annual Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually safeguard the production and distribution of our valuable water resources.

We are pleased to report that our drinking water is safe and meets Federal and State requirements.

If you have any questions about this report or concerning your water utility, please contact the Water Department at 636-390-1076.

Do I need to take any special precautions?

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 can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

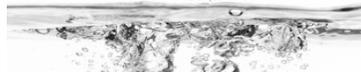
Why are there contaminants in my water?

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. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791). Contaminants that may be present in source water include:

A. **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Source Water Assessment:

The Department of Natural Resources conducted a source water assessment to determine the susceptibility of our water source to potential contaminants. This process involved the establishment of source water area delineations for each well or surface water intake and then a contaminant inventory was performed within those delineated areas to assess potential threats to each source. Assessment maps and summary information sheets are available on the internet at <http://maproom.missouri.edu/swipmaps/pwsid.htm>. To access the maps for your water system you will need this State Assigned Identification Code 'MO6010838'. The Source Water Inventory Project maps and information sheets provide a foundation upon which a more comprehensive source water protection plan can be developed.



Keeping Informed

If you would like to observe the decision-making process that affect drinking water quality, you may want to attend any of our regularly scheduled meetings. Board of Public Works meetings are held on the second Tuesday of each month at 7:30 a.m. at the City Hall Council Chambers at 405 Jefferson Street. City Council meetings are held on the first and third Mondays of each month at 7:00 p.m. at the City Hall Council Chambers at 405 Jefferson Street. If you have any further questions about this drinking water report, please call us at 636-390-1076.

What is the source of my 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. Our water comes from ground water wells (Well #3, #4, #5, #6, #7, #8, #9, #10, and #11) and some is purchased from Public Water Supply District No. 1 of Franklin County. The City of Washington has been mandated by The Missouri Department of Natural Resources to construct a permanent disinfection system on all wells using Hypochlorite.

Total Hardness

We receive many phone calls regarding what is the total hardness of our water expressed in grains per gallon. The average is 16.6 grains per gallon. The range is 14.1 to 16.6 grains per gallon.

Atencion!

Este informe contiene información muy importante. Tradúscalo o preguntale a alguien que lo entienda bien. [translated: This report contains very important information. Translate or ask someone who understands this very well.]

Is our water system meeting other rules that govern our operations?

The Missouri Department of Natural Resources regulates our water system and requires us to test our water on a regular basis to ensure it's safety. Our system has been assigned the identification number MO6010838 for the purposes of tracking our test results. Last year, we tested for a variety of contaminants. The detectable results of these tests are on the following pages of this report. Any violations of state requirements or standards will be further explained later in this report.

Violations and Health Effects Information

During the 2015 calendar year, we had the below noted violation(s) of drinking water regulations. Additional Required Health Effects Language: Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

Type	Analyte	Compliance Period
MCL (TCR), ACUTE	COLIFORM (TCR)	07/1/2015—07/31/2015
MCL (TCR), MONTHLY	COLIFORM (TCR)	05/01/2015—05/31/2015
MCL (TCR), MONTHLY	COLIFORM (TCR)	06/01/2015—06/30/2015
MCL (TCR), MONTHLY	COLIFORM (TCR) 1—E.COLI	07/01/2015—07/31/2015
Franklin Co PWSID 1 — Violations Occurred in the Calendar Year 2015		
MCL (TCR), MONTHLY	COLIFORM (TCR)	01/01/2015

B. **Inorganic contaminants**, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming.

C. **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

D. **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.

E. **Radioactive contaminants**, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the Department of Natural Resources prescribes regulations which limit the amount of certain contaminants in water provided by Public water systems. Department of Health regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Source Water Analysis

The state has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Records with a sample year more than one year old are still considered representative.

Regulated Contaminants (Part 1)

Unregulated Contaminant Monitoring Rule (UCMR)	Collection Date	Highest Value	Range	Unit
CHROMIUM, HEX	3/26/2013	0.079	0—0.079	UG/L
COBALT, TOTAL	10/2/2013	1.38	0—1.38	UG/L
MOLYBDENUM, TOTAL	10/2/2013	1.91	0—1.91	UG/L
STRONTIUM	10/2/2013	86.5	50.5—86.5	UG/L
VANADIUM, TOTAL	10/2/2013	0.23	0—0.23	UG/L



Regulated Contaminants (Part 2)

Inorganic	Units	MCL	MCLG	Highest Value	Range of Detections	Violation	Sample Date
<i>Sources of Arsenic: Erosion of natural deposits.</i>							
BARIUM — City Results	ppm	2	2	0.387	0.149 — 0.387	No	8/26/2014
BARIUM — PWSD #1 Results	ppm	2	2	0.626	0.204 — 0.625	No	8/26/2014
<i>Sources of Barium: Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.</i>							
CHROMIUM—CITY Results	ppb	100	100	2.19	0-2.19	No	8/22/2014
CHROMIUM—PWSD#1 Results	ppb	100	100	1.55	0 — 1.55	No	2/26/2014
<i>Sources of Chromium: Discharge from steel and pulp mills.</i>							
FLUORIDE — City Results	ppm	4	4	0.15	0-0.15	No	8/22/2014
FLUORIDE — PWSD #1 Results	ppm	4	4	0.12	0-0.12	No	8/26/2014
<i>Sources of Fluoride: Natural deposits; Water additive which promotes strong teeth.</i>							
NITRATE+NITRITE – City Results	ppm	10	10	0.17	0 — 0.17	No	9/03/2015
NITRATE+NITRITE – PWSD #1 Results	ppm	10	10	0.5	0.016— 0.45	No	12/21/2015
<i>Sources of Nitrate+Nitrite: Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.</i>							

Disinfection By Products	Monitoring Period	RAA	Range	Unit	MCL	MCLG
No Detected Results were Found in the Calendar Year 2015 - City/PWSD#1	—	—	—	—	—	—
<i>Sources of Disinfection By Products: Treatment of Water</i>						

Copper	Date	90th Percentile	Range	Unit	AL	Sites Over AL
City	2013-2015	0.101	0.00511 — 0.117	ppm	1.3	0
PWSD#1	2011-2013	0.115	0.0501-0.142	ppm	1.3	0
<i>Sources of Copper: Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.</i>						

Lead	Date	90th Percentile	Range	Unit	AL	Sites Over AL
City	2013-2015	2.78	1.16 — 6.76	ppb	15	0
PWSD#1	2011-2013	1.73	1.1-2.87	ppb	15	0
<i>Sources of Lead: Corrosion of household plumbing systems; Erosion of natural deposits.</i>						

Special Lead and Copper Notice: 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. WASHINGTON 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 (800-426-4791) or at <http://water.epa.gov/drink/info/lead/index.cfm>.

You can also find sample results for all contaminants from both past and present compliance monitoring online at the Missouri DNR Drinking Water Watch website <http://dnr.mo.gov/DWW/indexSearchDNR.isp>. To find Lead and Copper results for your system, type your water system name in the box titled Water System Name and select Find Water Systems at the bottom of the page. The new screen will show you the water system name and number, select and click the Water System Number. At the top of the next page, under the Help column find, Other Chemical Results by Analyte, select and click on it. Scroll down alphabetically to Lead and click the blue Analyte Code (1030). The Lead and Copper locations will be displayed under the heading Sample Comments. Scroll to find your location and click on the Sample No. for the results. If your house was selected by the water system and you assisted in taking a Lead and Copper sample from your home but cannot find your location in the list, please contact WASHINGTON for your results.

Radionuclides	Units	MCL	MCLG	Highest Value	Range of Detections	Violation	Sample Year
GROSS ALPHA PARTICLE ACTIVITY, TOTAL — City #1 Results	pCi/L			6.7	0—6.7	No	10/20/14
<i>Sources of Gross Alpha Particle Activity, Total: Erosion of natural deposits.</i>							

Microbiological - Coliform, Total (TCR)/E. Coli

The MCL for total coliform is determined by the number of samples taken per month. Systems that collect less than 40 samples per month are in violation if more than one sample tests

Microbiological	Result	MCL	MCLG	Typical Source
COLIFORM (TCR) CITY RESULTS	In the month of July 8 sample(s) returned as positive.	MCL—Systems that Collect Less Than 40 samples per month—no more than 1 positive monthly sample	0	Naturally present in the environment
E. COLI	In the month of July, 1 sample(s) returned as positive	MCL: A Routine Sample and a Repeat Sample are Total Coliform Positive, and One is also Fecal Positive/E. Coli Positive	0	Human and animal fecal waste
COLIFORM (TCR) - PWSD#1 results	In the month of January, 3 sample(s) returned as positive	MCL: Systems that Collect Less Than 40 Samples per Month—No more than 1 positive monthly sample	0	Naturally present in the environment

Definitions/Abbreviations

Population: 13243 This is the equivalent residential population served including non-bill paying customers

Definitions: **AL:** Action Level, or the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow. • **Level Found:** is the average of all test results for a particular contaminant. • **LRAA** Locational Running Annual Average or the locational average of sample analytical results for samples taken during the previous four calendar quarters. **MCL:** Maximum Contaminant Level, or 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, or 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 Disinfection Level, or the highest level of a disinfectant allowed in drinking water • **MFL:** million fibers per liter, used to measure asbestos concentration. • **MRDLG:** Maximum Residual Disinfectant Level Goal, or the level of a drinking water disinfectant below which there is no known or expected risk to health • **90th percentile:** For lead and copper testing 10% of test results are above this level and 90% are below this level • **pCi/L:** picocuries per liter is a measure of the radioactivity in water • **Range of Results:** Shows the lowest and highest levels found during a testing period, if only one sample was taken, then this number equals Highest Value. • **RAA:** Running Annual Average, or the average of sample analytical results for samples taken during the previous four calendar quarters. • **SMCL** Secondary Maximum Contaminant Level or the secondary standards that are not enforceable guidelines for contaminants and may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, color, and odor) in drinking water EPA recommends these standards but does not require water systems to comply. **TT:** Treatment Technique, or a required process intended to reduce the level of a contaminant in drinking water.

Abbreviations: **HAA5** Haloacetic Acids (mono-, di- and tri-chloroacetic acid, and mono- and di-bromoacetic acid) as a group. **n/a:** not applicable • **NTU:** Nephelometric Turbidity Unit, used to measure cloudiness in drinking water • at testing limits • **ppb:** parts per billion or micrograms per liter • **ppm:** parts per million or milligrams per liter • **MFL:** million fibers per liter, used to measure asbestos concentration. **TTHM** Total Trihalomethanes (chloroform, bromodichloromethane, dibromochloromethane, and bromoform) as a group.

Optional Contaminant Monitoring (not required by EPA) City Results Only (Monitoring is not required for optional contaminants) Secondary standards are non-enforceable guidelines for contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor or color) in drinking water. EPA recommends these standards but does not require water systems to comply.

Secondary Contaminants	Units	Highest Value	Range of Detections	Collection Date	MCL	SMCL
ALKALINITY, CaCO3 STABILITY	MG/L	258	219 — 258	8/22/2014		
CALCIUM	MG/L	55.8	47.1 — 55.8	8/22/2014		
CHLORIDE	MG/L	2.66	1.95 — 2.66	8/22/2014		250
CHROMIUM, HEX	UG/L	0.079	0—0.079	3/26/2013		
COBALT, TOTAL	UG/L	1.38	0 — 1.38	10/2/2013		
HARDNESS, CARBONATE	MG/L	285	242 — 285	8/22/2014		
IRON	MG/L	0.107	0 — 0.107	8/26/2014		0.3
MAGNESIUM	MG/L	35.4	29.9 — 35.4	8/22/2014		
MANGANESE	MG/L	0.00195	0 — 0.00195	8/26/2014		0.05
MOLYBDENUM, TOTAL	UG/L	1.91	0 — 1.91	10/2/2013		
NICKEL	MG/L	0.00293	0 — 0.00293	8/22/2014		0.1
PH	PH	7.91	7.74 — 7.91	8/22/2014		8.5
POTASSIUM	MG/L	1.21	0.76 — 1.21	8/22/2014		
SODIUM	MG/L	2.97	1.6 — 2.97	8/26/2014		
STRONTIUM	UG/L	86.5	50.5 — 86.5	10/2/2013		
SULFATE	MG/L	16.3	8.23 — 16.3	8/22/2014		250
TDS	MG/L	261	222 — 261	8/22/2014		500
VANADIUM, TOTAL	UG/L	0.23	0 — 0.23	10/2/2013		
ZINC	MG/L	0.0226	0.00232 — 0.0226	8/22/2014		5