



STILLWATER MUNICIPAL WATER SYSTEM
2016 Annual Water Quality Report
Public Water Supply ID OK1021220

Water Resources
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The 2016 Annual Water Quality Report provides information about the quality of your drinking water; the efforts made to improve the water treatment process; and how we protect our water resources. Our goal is to make sure you have a safe and dependable supply of drinking water. This report is also known as the Consumer Confidence Report (CCR).

Stillwater's water source is Kaw Lake, which is located approximately 10 miles east of Ponca City in Kay County. Kaw Lake surface water is transported to the City's treatment facility located at 1022 West Yost Road. In 2016, the facility supplied more than 2.3 billion gallons of clean drinking water to the Stillwater citizens, five rural water districts, and several mobile home communities in Payne and Noble Counties.

The City of Stillwater routinely monitors your drinking water for constituents according to federal (EPA) and state (ODEQ) rules and regulations. The tables in this report show the results for Jan. 1, 2016 to Dec. 31, 2016. Some constituents are analyzed less frequently than once per year, according to the required sampling schedule. The most recent data is reported for those. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some constituents. These constituents may be microbes, organic chemicals, radioactive or other materials. It's important to remember that the presence of these constituents does not necessarily pose a health risk.

If you have any questions about this report or concerns about your water utility, please contact Water Resources Department Director William Millis at (405) 742-8325 or the Water Treatment Plant Superintendent Doug Carothers at (405) 533-8492. You may also contact your mayor and city councilors.

To view a copy of the 2016 Stillwater Annual Water Quality Report, go online to Stillwater.org or contact the Water Resources staff at (405) 742-8325 or by email to shall@stillwater.org.

DEFINITIONS:

- Action Level (AL)* – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- Below Practical Quantitation Limits (BPQL)* – The method detection limit (MDL) adjusted for any dilutions or other changes made to the sample to deal with interferences/matrix effects.
- Maximum Contaminant Level (MCL)* – 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.
- Maximum Contaminant Level Goal (MCLG)* – 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.
- MRL* – Minimum Reporting Level.
- MPN/100 ml* – Most Probable Number of colonies per 100 mL of sample.
- Neohelometric Turbidity Unit (NTU)* – NTU is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
- Parts per billion (ppb) or Micrograms per Liter (ug/L)* – One part of contaminant per billion parts of water.
- Parts per million (ppm) or Milligrams per Liter (ug/L)* – One part of contaminant per million parts of water.
- Picocuries per Liter (pCi/L)* – Picocuries per liter is a measure of the radioactivity in water.
- Treatment Technique (TT)* – A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
- No Detection (ND)* – No organisms detected in the sample.

WATER QUALITY DATA

Microbial Contaminants

Parameter	MCL	Maximum Level Detected	Lowest Monthly Percentage	Violations	Sources of Contaminant
Turbidity	0.3 NTU in 95% of all samples taken within one month	0.64 NTU in a single sample	< 0.3 NTU in 99.4% of all samples taken within one month	None	Soil runoff

Radionuclides

Parameter	MCL	Level Detected	Range Detected	Violations	Source of Contaminant
Gross Alpha	15 pCi/L	1.05 pCi/L	1.05 - 1.05 pCi/L	None	Erosion of natural deposits
Gross Beta	4 mrem/Year	5.0 pCi/L	5.0 - 5.0 pCi/L	None	Erosion of natural deposits
Radium 226 + 228	5 pCi/L	0.158 pCi/L	0.158 - 0.158 pCi/L	None	Erosion of natural deposits
Uranium	30.0 ug/L	BPQL	< 1.0 - < 1.0 ug/L	None	Erosion of natural deposits

Disinfection By-Products Rules Stage 2

Parameter	MCL	Level Detected	Range Detected	Violations	Source of Contaminant
Total Trihalomethanes	80 ppb	28.1 ppb	8.18 - 28.1 ppb	None	By-product of water chlorination
Haloacetic Acids 5	60 ppb	32.1 ppb	4.94 - 32.1 ppb	None	By-product of water chlorination
Bromate	10 ppb (RAA)	< 2.06 ppb	< 2.06 - < 2.06 ppb	None	By-product of water ozonation

Lead and Copper (Regulated at Customer's Tap)

Parameter	Action Level*	90% Sample Detected	Violations	Source of Contaminant
Lead	15 ppb	BPQL (< 0.005 ppb)	None	Corrosion of household plumbing systems
Copper	1.3 ppm	0.029 ppm	None	Corrosion of household plumbing systems

*Action Level – 90% of samples must be below this level

Organic Carbon

Parameter	MCL	MCLG	Date Sampled	2016 Removal Average	Removal Range (Low-High)	Violations	Source of Contaminant
Total Organic Carbon	TT removal < 1.0 (running avg.)	N/A	Jan. - Dec. 2016 (monthly)	1.12	0.66% - 1.66	None	Naturally present in the environment.

Bacteriological Contaminants

Parameter	MCL	Maximum Level Detected	Number of Positive E. Coli	MCLG	Violations	Likely Source of Contaminant
Coliform (TCR)	< 5% of monthly Samples positive	0	0	0	None	Naturally present in the environment.

Inorganic Contaminants

Parameter	MCL	Maximum Level Detected	Range of Detections	Date Sampled	MCLG	Violations	Possible Sources of Contaminant
Antimony	6 ppb	BPQL	< 0.002 ppm	10/22/15	6 ppb	None	Discharge from petroleum refineries; Fire retardants; Ceramics; Electronics; Solder.
Arsenic	10 ppb	BPQL	< 0.005 ppm	10/22/15	10 ppb	None	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Barium	2 ppm	0.032 ppm	0.032 ppm	10/22/15	2 ppm	None	Erosion of natural deposits; Discharge of drilling wastes or metal refineries.
Fluoride	4 ppm	0.92 ppm	0.44 – 0.92 ppm	10/22/15	4 ppm	None	Erosion of natural deposits; Water additive; Discharge from fertilizer and aluminum factories.
Nitrate +Nitrite	10 ppm	0.56 ppm	0.56 ppm	10/22/15	10 ppm	None	Erosion of natural deposits; Runoff from fertilizer use; Leaching from sewage sources.
Selenium	0.05 ppm	BPQL	< 0.005 ppm	10/22/15	0.05 ppm	None	Erosion of natural deposits; Discharge from mines, or petroleum refineries.
Beryllium	0.004 ppm	BPQL	< 0.001 ppm	10/22/15	0.004 ppm	None	Discharge from metal refineries, coal burning factories, electrical, aerospace, and defense industries.
Cadmium	0.005 ppm	BPQL	< 0.0010 ppm	10/22/15	0.005 ppm	None	Erosion of natural deposits; Corrosion of galvanized pipes; Discharge from metal refineries; Runoff from waste batteries, paint.
Chromium	0.10 ppm	BPQL	< 0.01 ppm	10/22/15	0.10 ppm	None	Erosion of natural deposits; Discharge from steel and pulp mills.
Mercury	0.002 ppm	BPQL	< 0.0002 ppm	10/22/15	0.002 ppm	None	Erosion of natural deposits; Discharge from factories and refineries; Runoff from landfills and crop lands.
Nickel	N/A	BPQL	< 0.010 ppm	10/22/15	N/A	None	Erosion of natural deposits; Discharge from steel mills.
Thallium	0.002 ppm	BPQL	< 0.0010 ppm	10/22/15	0.002 ppm	None	Leaching from ore-processing sites; Discharge from electronics, glass, and drug factories.
Sodium	N/A	64.7 ppm	64.7 ppm	10/22/15	N/A	None	Erosion of natural deposits.

Long Term 2 Enhanced Surface Water Treatment Rule (Raw Water Testing)

Analyte \ Results	Jan 13	Feb 10	Mar 9	Apr 13	May 11	Jun 8	Jul 14	Aug 10	Sep 14	Oct 12	Nov 9	Dec 14
Cryptosporidium, oocysts/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Giardia, cysts/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
E. Coli, MPD/100 mL	2.0	3.0	12.1	2.0	4.1	35.0	< 1	< 1	40.4	7.4	7.4	60.5
Turbidity, NTUs	19.1	19.9	11.0	7.12	10.8	63.5	40.2	24.3	128	44.1	19.6	8.1

Violations – Not all of the required water quality samples were collected and analyzed.

Violation Type	Begin	End	Violation Explanation
Nitrate and Nitrite [measured as Nitrogen] Monitoring, Routine Major	1/1/2016	12/31/2016	We failed to test our drinking water for nitrate-nitrite during 2016. Because of this, we cannot be sure of the quality of our water for this parameter during this period.
Infants below the age of six months who drink water containing nitrate and nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome. In past years, nitrate-nitrite has measured well below the MCL. Additionally, in 2017 nitrate-nitrite has measured well below the MCL.			
Total Organic Carbon Monitoring, Routine Major	8/1/2016	9/30/2016	We failed to test our drinking water for total organic carbon during the months indicated. Because of this, we cannot be sure of the quality of our water for this parameter during this period.
	11/1/2016	12/31/2016	
Total organic carbon has no known health effects. However, total organic carbon provides a medium for the formation of disinfection by-products. These byproducts include Trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health problems. For the other months of the 2016 year, as well as past years and in 2017, our TOC removal and byproducts test results were well below the MCLs.			

In our continuing efforts to maintain a safe and dependable water supply it may be necessary to make improvements to the water system. The cost of these improvements may be reflected in the rate structure. Water rate adjustments may be necessary in order to address these improvements.

Important 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 can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. Environmental Protection Agency / Center for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800) 426-4791.

Additional Information about Lead

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 <http://www.epa.gov/safewater/lead>.

Call the Water Resources office at (405) 742-8325 or email shall@stillwater.org, if you have any questions.