2018
Annual Drinking Water Quality Report
City of Cushing

We're very pleased to provide you with this year's Annual Drinking Water Quality Report. We want to keep you informed about the excellent water and services we have delivered to you over the past year. Our goal is and always has been, to provide to you a safe and dependable supply of drinking water. This report shows our water quality and what it means.

Our water source is ground water drawn from nine (9) wells. The wells range from 512 feet to 718 feet deep and produce from the Vamoosa-Ada Aquifer. An analysis of contamination susceptibility of our source water has been done. The analysis showed that our water's susceptibility to contamination is LOW. This plan is available for viewing in our office. Information such as potential sources of contamination is listed in the plan.

If you have any questions about this report or concerning your water utility, please contact James Landis, Water Plant Superintendent at (918) 223-2915 between 7:00 a.m. and 4:00 p.m. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the third Monday of each month at 7:00 p.m. at City Hall, 100 Judy Adams Boulevard, Cushing, Oklahoma.

The City of Cushing routinely monitors for contaminants in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1st to December 31st, 2017. (Some of our data may be more than one year old because the state allows us to monitor for some contaminants less often than once per year.) All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It's important to remember that the presence of these contaminants does not necessarily pose a health risk.

WATER QUALITY DATA TABLE

The table below lists all of the drinking water contaminants we detected for the calendar year of this report. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report.

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Non-Detects (ND) - laboratory analysis indicates that the constituent is not present.
Parts per million (ppm) or Milligrams per liter (mg/l)
Parts per billion (ppb) or Micrograms per liter (ug/l)
Parts per trillion (ppt) or Nanograms per liter (nanograms/l)
Parts per quadrillion (ppq) or Picograms per liter (picograms/l)
Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.
Millirems per year (mrem/yr) - measure of radiation absorbed by the body.
Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
Action Level (AL) - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
Maximum Contaminant Level (MCL) - The MCL is 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 - The MCLG is 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.

WATER QUALITY DATA						
Contaminant	Violation Yes/No	Highest Level Detected	Range Detected	MCL	MCLG	Likely Source of Contamination
Microbiological Contaminants						
1. Total Coliform Bacteria (System takes ≥40 monthly samples) (System takes <40 monthly samples) *(highest number of samples in a single month)*	Y	2		5% positive 2 positive	0	Naturally present in the environment
3. Turbidity (NTU) *(highest single measurement)*	N	2.0	.02-2.00	TT = 1 NTU	N/A	Soil runoff
4. Turbidity (NTU) *(highest monthly level)*	N	99.91%	.02-2.00	TT ≤ 0.3 NTU in 95% of monthly samples	N/A	
Radiochemical Contaminants						
6. Gross Beta (pCi/L)	N	4.12		50	0	Decay of natural and man-made deposits
7. Gross Alpha (pCi/L)	N	2.71		15	0	Erosion of natural deposits
8. Combined radium 226/228 (pCi/L)	N	1.220		5	0	Erosion of natural deposits
Inorganic Contaminants						
12. Barium (ppb)	N	.019	0-.0019	2000	2000	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
17. Chlorine (ppm)	N	3.2	0.1 – 3.2	MRDL = 4	MRDLG = 4	Water additive used to control microbes
21. Copper (ppm)	N	.062	ND-.062	AL=1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

23. Fluoride (ppm)	N	.60	.16 - .60	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
24. Lead (ppb)	N	ND	ND	AL=15 *Action Level – 90% of samples must be below this level.*	0	Corrosion of household plumbing systems, erosion of natural deposits
26. Nitrate - NO$_3$ (ppm) (as Nitrogen)			ND	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
27. Nitrite - NO$_2$ (ppm) (as Nitrogen)			ND	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
42. Haloacetic Acids (HAA5) (ppb)	N	1.879	2.220-7.480	60	N/A	By-product of drinking water chlorination
49. TTHM [Total trihalomethanes] (ppb)	N	18.849	2.490 - 49.800	80	N/A	By-product of drinking water chlorination

Microbiological Contaminants:

(1) Total Coliform. 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.

Stage 2 DBP Rule requires some systems to complete an Initial Distribution System Evaluation (IDSE) to characterize DBP levels in their distribution systems and identify locations to monitor DBPs for Stage 2 DBP Rule compliance. The following table summarizes the individual sample results for the IDSE monitoring in (2018):

Contaminant	Number of Analyses	Minimum Level Detected	Highest Level Detected
Haloacetic Acids (HAA5) (ppb)	8	2.220 UG/L	1.879 UG/L
Total Trihalomethanes (TTHM) (ppb)	8	2.490 UG/L	18.849 UG/L

We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. This past year we had two samples test positive for total coliform. This does not pose a threat to the quality of our water supply.

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 and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water before we treat it 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 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 and residential uses.
Radioactive contaminants, which are naturally occurring.
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.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA 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 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 EPA's Safe Drinking Water Hotline (800-426-4791).

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. EPA/CDC 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).

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. The City of Cushing 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*.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a significant increased risk of having the described health effect.

Please call our office if you have questions.

We at the City of Cushing work around the clock to provide top quality water to every tap, said James Landis, Water Distribution Superintendent.

THIS REPORT IS NOT BEING SENT DIRECTLY TO CUSTOMERS; HOWEVER, A COPY IS AVAILABLE FOR REVIEW IN THE ENGINEERING OFFICE AT CUSHING CITY HALL, 100 JUDY ADAMS BOULEVARD, CUSHING, OKLAHOMA 74023.