City of Oklahoma City
2016 Drinking Water Quality Report
For the testing period of January 1-December 31, 2016

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

Oklahoma City Water Utilities Trust

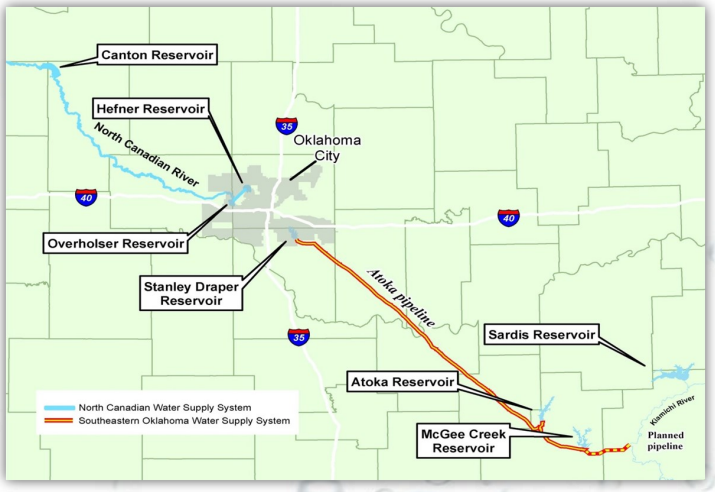
The City of OKLAHOMA CITY

Municipal tap water is a valuable resource for every community. It contributes to public health, drives business, keep citizens safe from waterborne illness, and helps us in our daily lives.

The Oklahoma City Utilities Department is committed to providing clean, fresh drinking water to residents and visitors in the communities we serve. More than 1.2 million Oklahomans in 19 different communities receive Oklahoma City drinking water through our retail and wholesale programs. That's nearly one-third of the state population.

Sourced from the Earth

Oklahoma City's water footprint spans 250 miles and includes seven surface water reservoirs from five counties in Oklahoma. They include Canton Lake in northwest Oklahoma, McGee Creek, Lake Atoka, and Sardis Lake in southeastern Oklahoma, as well as Lake Overholser, Lake Hefner and Lake Stanley Draper in Oklahoma City. These reservoirs feed into our water treatment plants, which take the raw water collected and treat it to provide safe drinking water to the communities we serve. They also provide recreational opportunities such as boating, fishing or water skiing to lake visitors.



Raw water accumulates in reservations thanks to our spring and summer rains, and from below-ground aquifers. As water travels over the ground, it can pick up naturally-occurring minerals found in rocks and soil, pesticides and herbicides used in farming, as well as bacteria from animal or human activity.

To ensure water is safe to drink, the Oklahoma Department of Environmental Quality (ODEQ) and Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by public utilities.

Raw water is processed at Oklahoma City's three water treatment plants, the Hefner Water Treatment Plant, the Draper Water Treat Plant and Overholser Treatment Plant. Each plant treats the water in a slightly different way, based upon the raw water make-up and the technology available at each facility.

During treatment, certified water quality experts filter the raw water to remove harmful bacteria and other contaminants. They then disinfect it by introducing small amounts of additives such as chlorine for sanitization and fluoride, which aids in the prevention of tooth decay. Before water can be distributed to homes and businesses, it must undergo vigorous testing to ensure it meets all Federal and State quality standards for purity and cleanliness.

Meeting the Test

Water is tested continuously at each of our three treatment plants to ensure it meets both EPA and ODEQ standards. We also test water at 240 ODEQ-approved sites throughout Oklahoma City. Remote testing helps us monitor the reliability of our water distribution system, which includes more than 3,800 miles of pipeline in Oklahoma City. Testing in remote areas also helps ensure that the quality of water delivered from plant to tap remains consistent along the way. In 2016, our water quality chemists and plant operators tested more than 205,000 individual water samples. Results are reported monthly to the ODEQ, and serve as independent quality control.

Test results are also included here in our annual Consumer Confidence Report (CCR), which is a requirement of the 1974 Safe Drinking Water Act. The Consumer Confidence Report allows the general public to see the what is in their water based upon 24 tested contaminants. In each case, Oklahoma City water meets or surpasses all of the purity and cleanliness requirements set forth by the EPA. Oklahoma City's CCR is included with this report, and can be found online at www.okc.gov/ccr. If you would like to receive a copy of the report by mail, call (405) 297-2833.

Oklahoma City Utilities - Water Quality Summary 2015

DETECTED CONTAMINANTS	UNITS	IDEAL GOAL (EPA'S MCLG)	HIGHEST LEVEL ALLOWED (EPA'S MCL)	HEFNER WTP PWS ID 1020902	DRAPER WTP PWS ID 1020902B	OVERHOLSER WTP PWS ID 1020902C	COMPLIANCE	MAJOR SOURCES IN DRINKING WATER
Inorganic Compounds								
Fluoride[1]	ppm	4	4	Average level detected in most recent testing - 2015			YES	Added during treatment for dental health or dissolved from natural deposits
				0.75	0.73	0.77		
Lead	ppb	0	AL = 15	Most recent systemwide distribution testing			All Sites < AL	Corrosion of household plumbing; erosion of natural deposits
				June/July 2015 - 90th Percentile = <5.0			YES	
Barium	ppm	2	2	Highest level most recent testing - 2013			YES	Discharge of Drilling Wastes; discharge from metal refineries; erosion of natural deposits
				0.052	0.057	0.032		
Copper	ppm	0	AL = 1.3	Most recent systemwide distribution testing			All Sites < AL	Corrosion of household plumbing; erosion of natural deposits
				June/July 2015 - 90th Percentile = 0.079			YES	
Arsenic	ppb	0	10	Range detected in most recent testing - 2013			YES	Erosion of natural deposits; runoff from orchards; runoff from electronics and glass production wastes
				<2	<2	<2		
Nitrate-Nitrite[2]	ppm	10	10	Highest level			YES	Runoff from fertilizer; leaching from septic tanks, sewage or erosion of natural deposits
				0.314	0.250	0.234		
Radiological								
				Range detected in most recent testing - 2012			YES	Decay of natural and man-made deposits
Gross Alpha	pCi/L	0	15	<2.229	<0.4744	<2.373		
Gross Beta	pCi/L	0	50	6.784	2.611	6.824		
Radium 226 + 228	pCi/L	0	5	<0.545	<0.495	0.980		
Uranium	ppb	0	30	<1	<1	<1		
Disinfection By-Products Stage 2 Rule Monitoring[3]								
Total Trihalomethanes[4]	ppb	0	80 (LRAA)	Most recent systemwide distribution testing 2014/2015			YES	By-product of drinking water disinfection
				Highest Locational Running Annual Average (LRAA)				
				10401 W. Stanley Draper Dr (Draper) - 75.70				
				Range Detected: 4.72 - 85.57				
				Highest quarterly average (LRAA)				
				24.56	75.70	69.68		
				Range detected				
				4.72 - 38.85	49.00 - 83.78	53.62 - 85.57		
Haloacetic Acids[4]	ppb	0	60 (LRAA)	Most recent systemwide distribution testing 2014/2015			YES	By-product of drinking water disinfection
				Highest Locational Running Annual Average (LRAA)				
				6400 N Westminster Rd (Draper) - 53.23				
				Range Detected: 2.51 - 63.90				
				Highest quarterly average (LRAA)				
				11.45	53.23	38.20		
				Range detected				
				2.51 - 19.20	20.10 - 63.90	16.40 - 48.60		
Bromate[5]	ppb	0	10 (RAA)	Highest quarterly average (RAA) - 1.76			YES	By-product of disinfection by ozone **Only Hefner Plant uses Ozone**
				Range detected - <8.75 - 24.6				
Precursor Removal								
Total Organic Carbon[6] **(TOC)**			TT = Ratio must be greater than or equal to 1.00 for compliance	Average of monthly ratios			YES	Naturally occurring
				1.88	0.391	1.43		
				Monthly Ratio = (% TOC removed) divided by (% TOC removal required)				
Disinfection Residual								
Chloramines as Chlorine[7]	ppm	NA	MRDL	Average readings			YES	Water additive used to control microbes
			4.0	3.67	3.43	3.20		
			Range detected	2.10 - 4.50	2.70 - 3.90	2.01 - 4.32		
Microbiological								
Coliform Bacteria	CFUs % positive	0	Presence of Coliform bacteria in <5% of samples	2015 System-wide distribution testing			YES	**Naturally present in the environment - No Fecal Coliforms or E. Coli in 3105 tests in 2015.**
				Month having the highest % positive - No positive samples in 2015				
				Zero positive Coliform results in 3105 samples (0.00 % occurrence)				
Clarity								
Turbidity	NTU % > 0.3	NA	TT = > 0.3 NTU in not more than 5% of samples	Monthly lowest % < 0.3 NTU			YES	Lime and/or calcium carbonate particles from softening efforts; soil runoff
				100.0%	100.0%	100.0%		
				Highest single reading				
				0.25	0.15	0.26		
Long Term 2 Enhanced Surface Water Treatment Rule								
Cryptosporidium[8]	cysts/L	0	NA	All source waters tested at less than 0.075 cysts/L (lowest risk category)			YES	Storm runoff, agricultural runoff and leaking sewage systems
Detected UCMR3 Analytes (2013)[9]								
				Average	**Range**	**More Info**		
Chlorate	ppb	NA	NA	36.4	<20.0 - 36.4	1 of 12 samples >20.0	NA	By-product of drinking water disinfection, making of dyes, explosives, matches, printing fabrics, herbicides, antiseptics, toothpastes and in paper pulp processing.
Hexavalent Chromium	ppb	NA	NA	0.141	<0.030 - 0.391	11 of 12 samples >0.030	NA	Naturally occurring. By-product of making steel and other alloys, plating, dyes and pigments, leather and wood preservation.
Total Chromium	ppb	100 (0.100 mg/L)	100 (0.100 mg/L)	0.428	<0.200 - 0.471	2 of 12 samples >0.200	YES	Naturally occurring. By-product of making steel and other alloys, plating, dyes and pigments, leather and wood preservation.
Molybdenum	ppb	NA	NA	2.76	<1.00 - 3.24	6 of 12 samples >1.00	NA	Naturally occurring. By-product of making steel and other alloys, lubricants, dyes and pigments, fertilizers.
Strontium	ppb	NA	NA	295	42.9 - 763	12 of 12 samples >3.00	NA	Naturally occurring. By-product of making electronics and fireworks.
Vanadium	ppb	NA	NA	2.78	<0.200 - 7.50	11 of 12 samples >0.200	NA	Naturally occurring. By-product of making steel alloys, chemical manufacturing, ceramics and batteries.

Definitions & Abbreviations Used in the Water Quality Summary

EPA – US Environmental Protection Agency
MCL – Maximum Contaminant Level is the highest level of a contaminant allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology.
MCLG – Maximum Contaminant Level Goal is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow a margin of safety.
MRDL – Maximum Residual Disinfectant Level is the highest level of a disinfectant allowed in drinking water, based on an annual average and does not apply to individual samples. There is convincing evidence that addition of a disinfectant is necessary to control microbial contaminants. Compliance with the MRDL is calculated as a Running Annual Average (RAA).
MRDLG – Maximum Residual Disinfectant Level Goal is 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 contamination.
RAA – Running Annual Average is the average of the last 12 months or last 4 quarters that the facility is in operation. Disinfectants and disinfectant by-products monitored in this way are Total Trihalomethanes, Haloacetic Acids, Bromate and Chloramines.
LRAA – Locational Running Annual Average is the average of the last 12 months or last 4 quarters for each identified monitoring location in the distribution system. This differs from past requirements, which determined compliance by calculating the RAA of samples from all monitoring locations across the distribution system. Total Trihalomethanes and Haloacetic Acids are monitored in this way.
AL – Action Level
TT – Treatment Technique - a required process intended to reduce the level of a contaminant in drinking water.
NTU – Nephelometric Turbidity Units (a measure of clarity)
pCi/L – picocuries per liter (a measure of radioactivity)
ppm – parts per million or milligrams per liter (mg/L)
ppb – part per billion or micrograms per liter (ug/L)
CFU – Colony Forming Units
< – less than > – greater than

Drinking Water Sources

The sources of drinking water nationwide include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or human activity. Drinking water (including bottled water) may reasonably be expected to contain at least small amounts of some substances. The presence of dissolved minerals does not necessarily indicate that water poses a health risk. The City of Oklahoma City treats and filters all water from reservoirs to remove any possible harmful contaminants according to State and Federal standards.

Contaminants that may be present in raw – or untreated – water include microbes (viruses and bacteria), inorganics (salts and metals), pesticides and herbicides (from various sources, including agriculture, storm water runoff and residential uses), and radioactive materials that are naturally occurring.

The Environmental Protection Agency limits the amount of contaminants in water provided by public systems to ensure tap water is safe to drink. The Food and Drug Administration regulations limit contaminants in bottled water in order to provide the same public health protection.

Some contaminants may cause color, taste or odor problems in water but are not necessarily causes for health concerns. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 800-426-4791 or at www.epa.gov/safewater.

People with Health Concerns

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 of infections. These people should seek advice about drinking water from their healthcare providers. The EPA and Centers for Disease Control guidelines on appropriate ways to lessen the risk of infection by Cryptosporidium (an intestinal parasite that can be fatal in some immuno-compromised persons) and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

Footnotes

Monitoring Frequency Note: The state has set forth enforceable regulations on how often contaminants must be monitored and tested. Some of our data, though representative, is more than one year old. ODEQ monitors and tests the following Inorganic Compounds and Radiological Compounds for Oklahoma City Utilities:
Barium, Arsenic, Gross Alpha, Gross Beta, Radium 226 + 228 and Uranium.

Required Sample Frequency:
Every 9 years - Fluoride, Barium and Arsenic
Every 6 years – Radionuclides
Every 3 years – Lead and Copper

1. Fluoride: Monitored every 12 hours at each WTP. The highest single reading for 2015 at each plant was below the MCL and considered a safe level.
Draper – Highest single reading = 0.97 ppm. Average fluoride concentration for 2015 = 0.73 ppm
Overholser – Highest single reading = 1.04 ppm. Average fluoride concentration for 2015 = 0.77 ppm
Hefner – Highest single reading = 1.25 ppm. Average fluoride concentration for 2015 = 0.75 ppm
2. Nitrate-Nitrite: Measured as the sum of Nitrate-N and Nitrite-N.
3. Disinfection By-Products Stage 2 Rule Monitoring: U.S. water utilities are required to continuously improve the quality of water delivered to customers. The Federal Environmental Protection Agency and the Oklahoma Department of Environmental Quality enforce drinking water laws and develop long-range improvement activities. In 2009, Oklahoma City collected information on how THMs and HAAs change in the water system and is working with EPA and DEQ to decrease the numbers.
4. Total Trihalomethanes and Haloacetic Acids: The MCL is based on the RAA; therefore the MCL does not apply to individual samples that are allowed to be higher than the MCL.
5. Bromate: The MCL is based on the RAA; therefore the MCL does not apply to individual samples that are allowed to be higher than the MCL. Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.
6. Total Organic Carbon: Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection by-products. These by-products include Trihalomethanes (THMs) and Haloacetic Acids (HAAs). Drinking water containing these by-products in excess of the MCL (Maximum Contaminant Level) may lead to adverse health effects. TOC compliance is based on the percent TOC removed, not the total amount present. The starting TOC at the Draper Treatment facility is low; therefore the potential for formation of THMs and HAAs due to TOC is low. The THM and HAA values for the Draper Treatment facility are below the LRAA MCL, which is currently considered a safe level for these disinfection by-products. Draper Treatment facility uses an alternative method (SUVA analysis) for meeting TOC removal criteria.
7. Chlorine: Compliance with the 4.0 mg/L MRDL is based upon an annual average; therefore, the MRDL does not apply to individual samples that are allowed to be higher than the MRDL.
8. Cryptosporidium: Current round of LT2 testing is underway. Not enough data to calculate the 12 month running averages. Current averages with 11 data points are <0.075 cysts/L (0.029 – Overholser, Non-detect for all Hefner, Draper and Atoka samples).
9. UCMR3: EPA uses the Unregulated Contaminant Monitoring (UCM) program to collect data for contaminants suspected to be present in drinking water, but that do not have health-based standards set under the Safe Drinking Water Act (SDWA). Every five years EPA reviews the list of contaminants, largely based on the Contaminant Candidate List. The SDWA Amendments of 1996 provide for:

- Monitoring no more than 30 contaminants every five years
- Monitoring only a representative sample of public water systems serving less than 10,000 people
- Storing analytical results in a National Contaminant Occurrence Database (NCOD).

UCMR3 is the third round of monitoring under the UCM Rule.

City of Oklahoma City

2016 Drinking Water Quality Report

For the testing period of January 1-December 31, 2016

HOW TO READ YOUR WATER QUALITY REPORT

The year(s) tests were conducted.

Below this level a contaminant has no known or expected health risks.

Highest amount of a contaminant EPA allows in drinking water.

How a contaminant ends up in Oklahoma City's drinking water.

Year Sampled	Contaminant	Highest Average Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Possible Source(s) of Contaminant
2016	Substance 1	0.05	0.02-0.11	2	4	ppm	N	Discharge of drilling wastes or metal refineries; erosion of natural deposits.
2016	Substance 2	2.4	0-3.4	No goal for the total	60	ppb	N	By-product of drinking water disinfection.

The amount from lowest to highest of a contaminant detected in Oklahoma City's drinking water.

Parts per billion—one ppb equals to one teaspoon in 1,302,000 gallons.

Parts per million - one ppm equals to one teaspoon in 1,302 gallons.

What is a Contaminant?

Put simply, a contaminant in water is anything other than hydrogen or oxygen, or H20, the two hydrogen atoms and one oxygen atom that make up one water molecule. Contaminants do not mean there is a health risk. They simply mean there is something else in the water besides the elements that make up the water.

Understanding the Tables

The following tables contain scientific terms and measures, some of which may require explanation.

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

Average: Regulatory compliance with some MCLs are based on running annual average monthly samples.

Erosion of natural deposits: This language is required in the "possible source of contaminant column" for contaminants that are naturally-occurring. Erosion of natural deposits actually means the substance is naturally-present in drinking water and was not added.

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.

Maximum Residual Disinfectant Level (MRDL): 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.

Maximum Residual Disinfectant Level Goal (MRDLG): 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

ppb: micrograms per liter or parts per billion. One part per billion is the same as one ounce in 7,812,500 gallons of water, an order of magnitude smaller than one part per million.

ppm: milligrams per liter or parts per million. One part per million is the same as one ounce in 7,812.5 gallons of water.

SqueezeEveryDrop.com

Our local lakes may look full, but only takes a few weeks with high temperatures and no rain to start depleting our water supply. You can help by following our everyday water conservation tips both in and outside your home.

- Fix leaky toilets and faucets
- Water your yard no more than 2x per week
- Turn off the water when brushing your teeth
- Use a bucket to save water while washing your car
- Top your garden with mulch to help keep soil moist
- Make sure your sprinkler heads work correctly

These and other water conservation tips can you not only cut down on water waste, but can help put pennies in your pocket.

For more information, visit squeezeverydrop.com or follow us on Facebook or Twitter @squeezeeverydrop.

PARTNERSHIP FOR SAFE WATER®

As part of our commitment to providing the highest quality drinking water, the Oklahoma City Utilities Department joined Partnership for Safe Water, a national initiative developed by the EPA along with the American Water Works Association, Water Research Foundation, Association of Metropolitan Water Agencies and other state and municipal water organizations. Through peer evaluation and review, we are able to ensure our customers continue to receive the highest quality water based upon the latest standards for safe water treatment and distribution.

Got Questions? Contact us!

Water Quality Questions or Concerns:
(405) 297-3483

Customer Service:
(405) 297-3833
water@okc.gov
To start or change water or trash service, pay or ask about a bill.

24-Hour Emergency Number:
(405) 297-3334
To report water or sewer outages, water quality concerns, or water emergencies.

Public Information:
(405) 297-2422
Media requests, general information about water, wastewater, solid waste services or Water Trust questions.

Oklahoma City Water Utilities Trust

Carl Edwards, Chair,
Independent Trustee

David Greenwell, Vice Chairman

Cody Graves, Independent Trustee

Mick Cornett, Mayor Trustee

Mark K. Stonecipher, Surrogate Trustee

James D. Couch, City Manager Trustee

Dennis Clowers, Surrogate Trustee

Chris Browning, General Manager

Frances Kersey, Secretary

Meetings are televised live on City Channel 20 (Cox Cable).

The public is welcome to attend meetings of the Oklahoma City Water Utilities Trust (OCWUT) held at 2 p.m. on the 1st and 3rd Tuesdays of each month (unless otherwise posted). Trust meetings are held inside the Oklahoma City Council Chambers in City Hall, 210 North Walker Ave. Agendas are posted on the City's website at www.okc.gov.