

The City of Midwest City

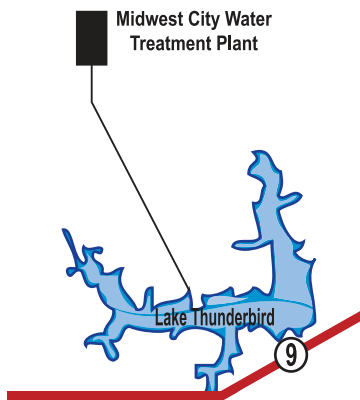
Public Works Administration

Information on Your Drinking Water

2014 CONSUMER CONFIDENCE REPORT

*Este informe contiene información muy importante sobre el agua que usted bebe.
Tradúzcalo ó hable con alguien que lo entienda bien.*

WHERE DOES YOUR WATER COME FROM?



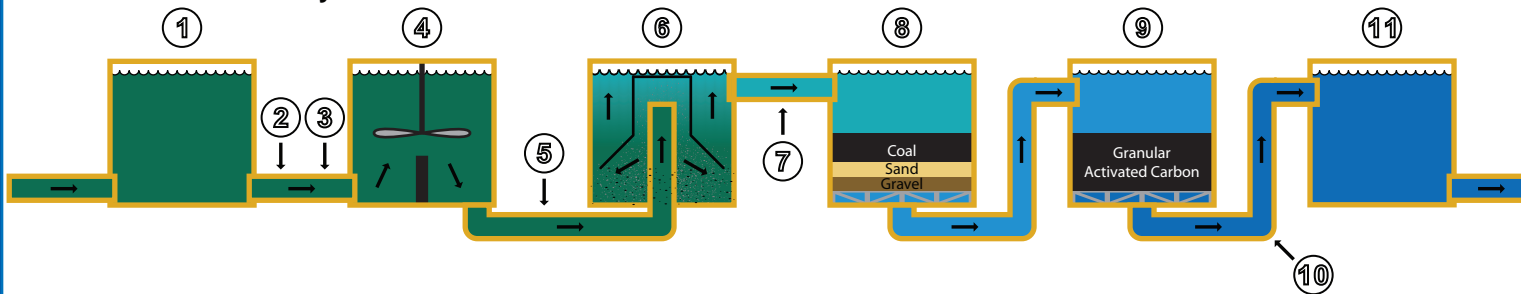
Midwest City's water supply comes from two sources: Lake Thunderbird and the Garber-Wellington aquifer. Most of Midwest City's water supply comes from Lake Thunderbird which is operated by the Central Oklahoma Master Conservatory District (COMCD). Lake Thunderbird was constructed in 1962 for flood control, recreation and as a water supply for Midwest City, Del City and Norman. COMCD pumps the water to the Midwest City Water Treatment Plant through a 19 mile long pipeline.

Midwest City's Water Treatment Plant was originally built in 1966 and could treat 6 million gallons per day (MGD). The plant was expanded in 1985 to its present capacity of 13 MGD. The plant operates 24 hours a day, 7 days a week to provide water to the residents of Midwest City. All employees at the Water Treatment Plant are required to undergo hours of approved training to obtain licenses from Oklahoma Department of Environmental Quality. The operators, lab and maintenance personnel of Midwest City are some of the most experienced and highly trained personnel in the state. The Treatment plant and its employees are regularly nominated for awards from the Oklahoma Water Pollution Control Association (OWPCA) for superior performance and dedication.

The City of Midwest City operates 22 active water wells that act as supplemental water supply for times of high water demand. Half of these wells pump into a pumping station that once served as Midwest City's main supply. The other half of these wells pump directly into the distribution system. Midwest City maintains a reserve water supply made up of water towers and holding tanks of just under 10 million gallons. Coupled with emergency electric generators at the Water Treatment Plant, Midwest City is able to deliver water continuously even during power outages or disaster.

We work continually to provide high quality water to every tap. In order to maintain a safe and dependable water supply, we sometimes need to make improvements that will benefit all of our customers. These improvements are sometimes reflected as rate structure adjustments. We ask that all of our customers help us conserve and protect our water resources, which impact our present lifestyle and our children's future.

How is Midwest City's water treated?



- 1. Regulating Tank** - Raw water pumped from Thunderbird is held in elevated storage tanks to provide gravity flow through the plant.
- 2. Coagulation** - Chemicals are added to the water which causes very fine particles to clump together.
- 3. Fluoridation** - A small amount of fluoride is added to help prevent cavities in children.
- 4. Flash Mix** - Motors mix the chemicals and water together to ensure an even distribution throughout.
- 5. Stabilization and Supplemental Treatment** - Chemicals are added to the water to prevent corrosion of the distribution piping.

- Chemicals can also be added to control taste and odor or to aid in the coagulation, flocculation and sedimentation processes.
- 6. Flocculation and Sedimentation** - Midwest City uses up-flow clarifiers which combine the flocculation (gathering together of small particles) and sedimentation processes.
 - 7. Applied Disinfection** - Chlorine Dioxide is added to the water to oxidize and disinfect materials and microbes in the water.
 - 8. Filtration** - Water is passed through special filters made of sand, gravel and coal. These filters remove the

- small particles that were not removed during the sedimentation process.
- 9. Secondary Filtration** - Using granular activated carbon for removal of organic compounds and taste and odor control.
 - 10. Final Disinfection** - Chlorine is added to the water to kill any microorganisms, including disease causing bacteria. Chlorine gas leaves a residual which protects the water as it flows through the distribution system.
 - 11. Storage and Pumping** - Finished water is held in holding tanks at the treatment plant until it is pumped to your tap.

You can use and enjoy water every minute of the day, confident that the safety and quality of your water is ensured.

The Midwest City Public Works Administration is pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the water quality and services we deliver to you every day.

Our 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 improve the water treatment process and protect our water resources. We are committed to insuring the quality of your drinking water.

Why are there contaminants in my drinking water?

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.

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 (EPA) Safe Drinking Water Hotline.

(800-426-4791)

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.

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 result from urban storm water 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 storm water 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 storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

Some people may be more vulnerable to contaminants in drinking water than the general population.

Immuno-compromised persons such as persons with cancer under going 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/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking 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. Midwest City 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>.

In the following 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.

BPQL - Below Practical Quantification Levels

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.

For more information regarding this report contact Ronnie Jackson @ 739-1082

Midwest City Water Quality Summary 2014

The City of Midwest City routinely monitors for constituents 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, 2014 (unless otherwise stated). 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 at 1-800-426-4791.

Substance	Units	MCLG	MCL	Water Treatment	Wells	Violation	Major Sources in Drinking Water
Inorganic Contaminants							
Lead	ppb	0	AL = 15	90th Percentile 2013		No	Corrosion of household plumbing systems; erosion of natural deposits
				5.20			
				# of Samples Exceeding AL			
				0			
Copper	ppm	0	AL = 1.3	90th Percentile 2013		No	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
				0.171			
				# of Samples Exceeding AL			
				0			
Fluoride	ppm	4	4	Avg. Level Detected in 2014		No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
				0.85 0.24			
				Range Detected in 2014			
				0.15 - 1.34			
Nitrate-Nitrite	ppm	10	10	Avg. Level Detected in 2014		No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
				0.22			
				Range Detected in 2014			
				0.10 - 0.37			
Barium	µg/L	2000	2000	Avg. Level Detected in 2014		No	Discharge from drilling waste; discharge from metal refineries; erosion of natural deposits
				414			
				Range Detected in 2014			
				344 - 528			
Chromium	µg/L	100	100	Avg. Level Detected in 2014		No	Discharge from drilling waste; discharge from metal refineries; erosion of natural deposits
				6.5			
				Range Detected in 2014			
				ND - 8.2			
Radiological Contaminants							
Beta/alpha emitters	pCi/L	0	50	Avg. Level Detected in 2014		No	Decay of natural and man-made deposits
				3.133			
				Range Detected in 2014			
				2.810 - 3.730			
Alpha emitters	pCi/L	0	15	Avg. Level Detected in 2014		No	Erosion of natural deposits
				6.293			
				Range Detected in 2014			
				4.310 - 7.410			
Combined Radium (226 & 228)	pCi/L	0	5	Avg. Level Detected in 2014		No	Decay of natural and man-made deposits
				2.153			
				Range Detected in 2014			
				1.450 - 2.880			
Uranium	µg/L	0	30	Avg. Level Detected in 2014		No	Decay of natural and man-made deposits
				2.350			
				Range Detected in 2014			
				ND - 3.10			
Disinfection By-Products							
Total Trihalomethanes (TTHMs)	ppb	0	80 (RAA)	Highest Running Annual Average		Yes	By-Product of drinking water chlorination
				42.2			
				Range Detected in 2014			
				ND - 182.00		* Quarterly Average	
Haloacetic Acids (HAA5)	ppb	0	60 (RAA)	Highest Running Annual Average		No	By-Product of drinking water chlorination
				15.6			
				Range Detected in 2014			
				ND - 51.10		* Quarterly Average	
Chlorite	ppb	800	1000	Avg. Level Detected in 2014		No	By-Product of drinking water chlorination
				42.4			
				Range Detected in 2014			
				ND - 50.0			
Chlorine	ppm	4	4	# of samples below 1.0 in 2014		No	Water additive used to control microbes
				0			
				Range Detected in 2014			
				1.10 - 2.4			
Precursor Removal Total Organic Carbon (TOC)	The percentage of Total Organic Carbon (TOC) removal was measured each month and the system met all TOC removal requirements.					No	Naturally occurring
Microbiological Contaminants							
Total Coliform	% negative samples/month	100%	95%	100.00%	100.00%	No	Naturally present in the environment
Turbidity	NTU % <0.3	100%	< 0.3 NTU in more than 95% of samples	Monthly Lowest % < 0.3 NTU		No	Soil runoff
				99.18%			
				Highest Single Reading 2014			
				0.42			

* The state allows us to monitor for some contaminants less than once per year because the concentrations do not change frequently. Some of our data, though representative, are more than one year old.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, 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.

Important Information About Your Drinking Water

Our water system violated the Maximum Contaminant Level (MCL) for Total Trihalomethanes (TTHMs) during the 3rd and 4th quarters of 2014. Although this incident was not an emergency, as our customers, you have a right to know what happened and what we did, and are doing to correct this situation.

What are TTHMs?

TTHMs are compounds resulting from the reaction of Chlorine and naturally occurring organic compounds in the water. Chlorine is used to disinfect the treated water and is essential to keeping water free from microbial contaminants. The reaction that forms TTHMs is a slow reaction that increases with water temperature and contact time between Chlorine and organic matter.

Midwest City attempts to limit the formation of TTHMs in several ways. First, we use Chlorine Dioxide as our initial disinfectant and oxidizer. Chlorine Dioxide reacts differently with organic material and does not form TTHMs. Chlorine Dioxide breaks down very quickly and does not leave a residual; therefore, it cannot be used in the distribution system. Second, we use Granular Activated Carbon (GAC) filters to remove additional organic material from the water before it is treated with Chlorine. These filters use the same material that is in most commercially available water treatment products for treating taste and odor, and just like those commercial products, the filters have to be replaced regularly. Lastly, we add Chlorine to the finished water right before it is pumped into the distribution system to minimize the amount of time Chlorine is in contact with the remaining organic material in the water and still provide a disinfection residual against microbial contamination.

What happened?

The GAC filter media was due for replacement in July, but was performed late due to a late bid opening for the new fiscal year. This meant the filter media was not replaced until mid-August. This caused the sample collected in the area of SE 29th and Post to exceed the MCL on August 4, 2014. Once the GAC media was replaced, the TTHM levels quickly dropped back below the MCL.

The contaminant level of TTHMs is determined by collection of quarterly samples and averaging the previous 3 quarters with the results. This is called a Running Annual Average (RAA). The RAA is calculated for the entire system and also for each sampling location, which is called a Local RAA (LRAA). This calculation resulted in our system violating the MCL for two consecutive quarters, even though the actual measured concentration at this site was below the MCL. All other sites were below the MCL.

What is being done?

In addition to regularly changing the GAC filter media, engineering work has begun on changing the Titan water tower at SE 29th and Post from a static level tower to a flow-through tower. This change in design will reduce the amount of time water sits in the tower, thereby also reducing the potential for TTHM formation. Several changes to the distribution system are also in the process of being made to increase water demand from the tower.

What does this mean?

This was not an emergency. If it was, you would have been notified immediately. MCLs are set extremely low; with standards 10 to 1000 times lower than any health problems are anticipated to occur. However, some people who drink water containing TTHMs in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system and may have an increased risk of getting cancer. Immuno-compromised persons, the elderly, and people with infants should seek advice about drinking water from their health care providers.