



**All 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 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. 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 at 1-800-426-4791.

#### **DEFINITIONS**

- Action Level (AL) – the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- BPQL - Below practical quantization limits.
- LRAA – Locational Running Annual Average
- Maximum Contaminant Level (MCL) – the highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as possible 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. MCLG's allow for a margin of safety.
- 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.
- Non-Detects (ND) – Laboratory analysis indicates that the constituent is not present.
- 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 (MG/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 contaminant in drinking water.

MCL's are set at very stringent levels. The EPA **ESTIMATES** drinking two (2) liters of water containing 100 ppb of THM's for 70 years, **COULD** result in three (3) extra cases of cancer for every ten thousand (10,000) people.

#### **TOTAL ORGANIC CARBONS (TOC), TOTAL TRIHALOMETHANES (TTHMs) AND HALOACETIC ACIDS (HAA5) ABOVE DRINKING WATER STANDARDS**

The EPA sets drinking water standards and has determined that monitoring Total Organic Carbon (TOC) removal is necessary to protect public health. TOC has no direct health effects. However, TOC provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and halo acetic acids (HAA5). THMs are created through the standard disinfection process involving chlorine and do not produce any discoloration or odor. Because the EPA has again lowered the amount of THMs allowable in water, the City of Skiatook, along with many other communities in Oklahoma that did not previously have a problem meeting the old standard, now finds itself in violation of the new standard. The standard or MCL for total trihalomethanes is 80 UG/L. Our average level of total trihalomethanes over the last year was 74 UG/L. The Department of Environmental Quality (DEQ) is working to help the City reduce the levels of THMs in our drinking water. We will continue to sample the trihalomethanes and halo acetic acids while the problem is being corrected and notify the public until the new standard has been met.

In order to increase public health protection by reducing the potential risk of adverse health effects associated with disinfection byproducts (DBPs), Skiatook adopted new testing methods, or stage 2 monitoring, in November of 2007. This testing follows even more stringent guidelines for detecting DBPs in the water system. Further enhancements to testing methods, known as Long Term Testing 2, was implemented in February of 2012.

#### **SKIATOOK'S ANNUAL DRINKING WATER QUALITY REPORT – 2015**

The City of Skiatook is pleased to provide you with our 2014 Annual Drinking Water report. We strive to keep you informed about the quality water and services 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.

Water sold to customers of the City of Skiatook is taken from Skiatook Lake and treated at the Skiatook Water Treatment Facility before distribution to Skiatook customers. The City of Skiatook routinely monitor for contaminants in your drinking water according to Federal and State Laws. In 2014, the City of Skiatook ran numerous tests looking for pollutants that might be dangerous to your health, and substances that can make the water smell bad to people who are sensitive to them. The City of Skiatook monitors your water monthly for microbiological contaminants and triennially for lead and copper concentrations. The following tables show the results of our monitoring for the period of January 1, 2014 to December 31, 2014.

The Oklahoma Department of Environmental Quality has completed a **Source Water Assessment** of our water supply reservoir and has determined that it is moderately susceptible to contamination. A copy of this report is available for public review at City Hall.

In order to ensure the tap water is safe to drink, EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. We treat our water according to EPA's regulations. The Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

The Skiatook Public Works Authority meets the second and last Tuesday of each month at 6:00 p.m. in the Municipal Board Room, 220 S. Broadway, Skiatook, OK. Please feel free to participate in these meetings. Copies of this report are available at no cost at the Skiatook Municipal Office located at 110 N. Broadway, Skiatook, OK, or at [http://www.cityofskiatook.com/Online\\_Tools/Document\\_Central.aspx](http://www.cityofskiatook.com/Online_Tools/Document_Central.aspx), then, click on the link labeled "CCR Water Quality Data 2014" to view a PDF copy of the report.

#### **TTHM VIOLATIONS FOR THIS REPORTING PERIOD**

Violation Begin: 7/1/14 Violation End: 9/30/14

Violation Begin: 10/1/14 Violation End: 12/31/14

CITY OF SKIATOOK 2014 WATER QUALITY DATA						
Contaminants	Average	Range of levels	Max Contaminant Level (MCL*)	MCLG	Likely source of contaminants	
Chlorine	2.33	0-4.66	MRDL*-4.0 parts per million annual average	4	Water additive to control microbes.	
Halo Acetic Acids	15	8.89-16.7	60 parts per billion LRAA*	n/a	By-product of drinking water disinfection	
Trihalomethane	74	40-99.8	80 parts per billion LRAA*	n/a	By-product of drinking water disinfection	
Barium	0.045		2 parts per million	2	Naturally present in the environment, drilling waste, metal refineries.	
Fluoride	0.53	25-82	4 parts per million	4	Erosion of natural deposits, water additive which promotes strong teeth, discharge from fertilizer and aluminum factories.	
Nitrate - Nitrite	BPQL	BPQL	Nitrate=10 parts per million	10; 1	Naturally occurring, fertilizers, sewage treatment plants, leaching from septic tanks.	
Beta Particles	3.27		50pCi/L * (4 mem/yr*)	0	Decay of natural and man-made mineral deposits.	
Copper**	BPQL	BPQL	AL*=1.3 parts per million at 90th percentile	1.3	Corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservatives.	
Lead**	BPQL	BPQL	AL* =15 parts per billion	0	Corrosion of household plumbing systems, erosion of natural deposits.	
E. coli*	N/A	N/A	Routine sample with (+) E. Coli followed by repeat sample with (+) Total Coliform or E. Coli	0	Human and animal fecal waste	
Chlorite	N/A	N/A	1 part per million	0.8	By-product of drinking water disinfection	
<b>Contaminants</b>	<b>Ave</b>	<b>Min</b>	<b>Max Contaminant Level (MCL*)</b>	<b>MCLG</b>	<b>Likely source of contaminants</b>	
Turbidity level found		0.99				
Lowest monthly % meeting regs		98%	TT=less than 0.3 NTU 98% of the time	n/a	Soil runoff.	
Total Coliform Bacteria within distribution system		0	Presence of coliform bacteria in more than 5% of samples	0	Naturally present in the environment	
Total Organic Carbon*	36%	2.25	Results are parts per million. MCL is TT=percent removal	n/a	Naturally present in the environment	

\*The percentage of Total Organic Carbon removal was measured each month and the system met all requirements unless violation is noted \*\*Data collected August 2012. Monitoring frequency is in compliance with regulation.

**VIOLATIONS TABLE**

TOTAL TRIHALOMETHANES (TTHM): Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Violation Type	Violation Begin	Violation End	Violation Explanation
MCL, LRAA	7/1/2014	9/30/2014	Water samples showed that the amount of this contaminant in our drinking water was above its standard (called a maximum contaminant level and abbreviated MCL for a locational running annual average abbreviated LRAA) for the period indicated.
MCL, LRAA	10/1/2014	12/31/2014	

CITY OF TULSA 2014 WATER QUALITY DATA						
Contaminants	Level Found	Minimum	Maximum	Max Contaminant Level (MCL*)	MCLG	Likely source of contaminants
Lowest monthly % meeting regs		99.4%		TT=less than .03 NTU 95 % of the time	n/a	Naturally present in the environment
<b>Total Coliform Bacteria within distribution system</b>			0.450%	Presence of coliform bacteria in more than 5% of samples	0	Naturally present in the environment, drilling waste, metal refineries.
Barium	0.048	0.034	0.068	2 parts per million	2	Naturally present in the environment, drilling waste, metal refineries.
Beta Particles**	2.42	2.17	2.66	50pCi/L * (4 mem/yr*)	0	Decay of natural and man-made mineral deposits.
Chlorine	2.4	1.4	3.00	MRDL*-4.0 parts per million annual average	4	Water additive to control microbes.
Chlorite	0.13	0	0.23	1 part per million	0.8	By-product of drinking water disinfection
Total Chromium	0.14	0	0.28	100 parts per billion	100	Discharge from steel and pulp mills; erosion of natural deposits
Copper***	0.19 ppm at the 90th percentile; 0 sites above AL			AL*=1.3 parts per million at 90th percentile	1.3	Corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservatives.
Fluoride	0.71	0.4	1	4 parts per million	4	Erosion of natural deposits, water additive which promotes strong teeth, discharge from fertilizer and aluminum factories.
Lead***	0 ppb at the 90th percentile; 0 sites above AL			AL* =15 parts per billion	0	Corrosion of household plumbing systems, erosion of natural deposits.
Nitrate - Nitrite	0.06	0	0.27	Nitrate=10 parts per million	10; 1	Naturally occurring, fertilizers, sewage treatment plants, leaching from septic tanks.
Total Organic Carbon	1.90	0.90	2.90	Results are parts per million. MCL is TT=percent removal	n/a	Naturally present in the environment
Halo Acetic Acids	19	0	17	60 parts per billion LRAA*	n/a	By-product of drinking water disinfection
Trihalomethane	36	17	43	80 parts per billion LRAA*	n/a	By-product of drinking water disinfection
pH	n/a	7.70	8.00	Aesthetic level 6.5-8.5 s.u.*		Measure of acidity. Naturally present, adjusted in drinking water treatment.
Chloride	14.0	9.1	19.0	Aesthetic level 250 parts per million		Naturally present, bime from oilfield operations.
Sodium	10.0	6.9	16.0	Standard has not been established		Naturally present, urban stormwater runoff or discharge from sewage treatment plants.
Sulfate	19.0	4.3	42.0	Aesthetic level 250 parts per million		Naturally present in the environment.

\*\*Data collected September 2010. Monitoring frequency is in compliance with regulation. \*\*\*Data collected August 2013. Monitoring frequency is in compliance with regulation.

**ADDITIONAL MONITORING:** Tulsa was required to participate in Unregulated Contaminant Monitoring (UCMR3) in 2014. Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. The following are those contaminants that were detected during UCMR3 monitoring.

Unregulated Contaminants	Average (parts per billion)	Minimum (parts per billion)	Maximum (parts per billion)
Bromochloromethane	0.02	0	0.092
Chlorate	79.3	0	244
Hexavalent Chromium	0.011	0	0.055
Molybdenum	0.14	0	1.1
Strontium	157	44.8	362
Vanadium	0.57	0	1.2