



# 2016 DRINKING WATER QUALITY REPORT

**If you would like additional information concerning this report about the quality of your drinking water, please contact Tyler Water Utilities at (903)939-8716.**

On September 18, 1998, the U.S. Environmental Protection Agency (EPA) adopted a rule requiring all water utilities to provide a detailed annual report informing its customers of the quality of their drinking water. Tyler Water Utilities is proud of our history of providing our customers with a safe and reliable supply of drinking water. In accordance with EPA requirements, the City of Tyler hereby provides this Annual Water Quality Report, which covers the period from January 1, 2016 to December 31, 2016.

### PUBLIC PARTICIPATION OPPORTUNITIES

The public may participate in City Council meetings held every second and fourth Wednesday at 9 a.m. involving water quality matters.

### REQUIRED INFORMATION

The Texas Commission on Environmental Quality (TCEQ) requires that the following information be provided in this report:

You may be more vulnerable than the general population to certain microbial contaminants, such as Cryptosporidium, in drinking water. Infants, some elderly, or immuno-compromised persons such as those undergoing chemotherapy for cancer; those who have undergone organ transplants; those who are undergoing treatment with steroids; and people with HIV/AIDS or other immune system disorders, can be particularly at risk from infections. You should seek advice about drinking water from your physician or health care provider. Additional guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline at (800)426-4791.

En Español: Este reporte incluye informacion importante sobre el agua para tomar. Para asistencia en espanol, favor de llamar al telefono (903)531-1230.

### SOURCES OF DRINKING WATER

Tyler Water Utilities receives raw surface water from two major sources. Raw water from Lake Tyler and Lake Tyler East, located approximately eight miles southeast of Tyler, is pumped to Golden Road Water Treatment Plant. Raw water from Lake Palestine, located approximately ten miles southwest of Tyler, is pumped to Lake Palestine Water Treatment Plant. At the treatment plants, raw water is treated, filtered, and disinfected before distribution. Tyler's water distribution system is also supplemented by eleven deep wells tapping the Carrizo-Wilcox aquifer.

### ADDITIONAL INFORMATION

To ensure 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 Environmental Protection Agency's Safe Drinking Water Hotline at (800)426-4791. Contaminants may be found in drinking water that may cause taste, color, or odor problems. These problems are not necessarily cause for health concern. For more information on taste, odor, or color of drinking water, please contact Tyler Water Utilities at (903)939-8716. TCEQ completed an assessment of our source water and results indicate that some of our sources are susceptible to certain contaminants. The sampling requirements for our water system are based on this susceptibility and previous sample data. Any detection of these contaminants will be found in this water quality report. For more information on source water assessments and protection efforts at our system, call (903)939-8716.

### WATER QUALITY RESULTS

The following tables provide the water quality results of Tyler's drinking water. Please note that a list of definitions has been provided to help you understand the tables.

### DEFINITIONS

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

**Contaminant** - Any physical, chemical, biological or radiological substance or matter in water.

**HRA Avg. (Highest Running Annual Average)** - The highest of four (4) values calculated by averaging each quarter's average result with the previous three (3) quarter's average results.

**LRAA (Locational Running Annual Average)** - Average of current sample result combined with the three previous sample results for an individual location

**LMPS (Lowest Monthly Percentage of Samples)** - The lowest of the monthly percentage of samples that meets the turbidity limit of <0.3 NTU.

**MCL (Maximum Contaminant Level)** - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology.

**MCLG (Maximum Contaminant Level Goal)** - 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.

**N/A** - Not Applicable

**NTU (Nephelometric Turbidity Unit)** - A unit of turbidity determined by measuring the side scattering of light caused by particulate matter.

**pCi/l (Picocuries per liter)** - A measure of radioactivity

**ppb (Parts per Billion)** - In drinking water, one atom or molecule of a substance in one billion molecules of water. Example: One cent in 10 million dollars equals one ppb.

**ppm (Parts per Million)** - In drinking water, one atom or molecule of a substance in one million molecules of water. Example: One cent in 10 thousand dollars equals one ppm.

**TT (Treatment Technique)** - A required process intended to reduce the level of a contaminant in drinking water.

**umho/cm** - A unit of measurement for conductivity.

**90th Percentile** - The value determined by ranking and numbering sample results from highest to lowest (lowest = 1), multiplying the total number of samples by 0.90 (90%), and determining the sample result at the calculated ranking. Example: If 30 samples are collected, the 90th percentile would be the 27th highest sample result.

**< (less than sign)** - The sign indicating the value was 'less than' or not detected at the detection limit of the analytical method or 'less than' the regulatory limit.

**ND** - Indicates that constituent tested below the detection limit

CITY OF TYLER DRINKING WATER QUALITY MONITORING ANALYSIS							
January 1, 2016 to December 31, 2016							
Regulated at the Customer's Tap							
Lead / Copper Results	Units	90th Percentile	MCL	MCLG	# of Sites Exceeding AL	Violation	Sources in Drinking Water
Copper	ppm	0.1330	AL = 1.3	1.3	0	No	Corrosion of customer plumbing
Lead	ppm	0.0027	AL = 0.015	0	1	No	Corrosion of customer plumbing
<p>The City of Tyler Water Utilities last sampled for Lead and Copper in 2016. Results for the 2016 lead and copper sampling indicate that our water system is below the action limit for lead and copper.</p> <p>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. This water supply 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 (1-800-426-4791) or at <a href="http://www.epa.gov/safewater/lead">http://www.epa.gov/safewater/lead</a>.</p>							

Regulated in the Distribution System – 2016 LRAA Results for Disinfection By-Products (per quarter)												
Parameters	Units	Quarter 1-2016		Quarter 2-2016		Quarter 3-2016		Quarter 4-2016		THM LRAA	HAA5 LRAA	Source in Drinking Water
		TTHM	HAA5	TTHM	HAA5	TTHM	HAA5	TTHM	HAA5	80	60	
DBP-01	ppb	82.1	81.2	78.4	63.9	63.7	51.3	56.9	41.5	80	60	Chlorination by-product
DBP-02	ppb	74.8	73.7	70.8	55.9	63.8	45.3	57.8	33.2	80	60	Chlorination by-product
DBP-03	ppb	63.9	59.1	59.8	49.1	57.7	45.9	63.6	43.6	80	60	Chlorination by-product
DBP-04	ppb	80.1	77.0	78.1	61.3	64.7	50.5	57.4	40.0	80	60	Chlorination by-product
DBP-05	ppb	80.4	80.0	77.7	61.9	63.0	50.9	54.2	41.3	80	60	Chlorination by-product
DBP-06	ppb	65.6	59.6	57.4	47.7	53.6	44.9	60.0	42.4	80	60	Chlorination by-product
DBP-07	ppb	76.7	67.1	76.8	55.7	62.3	49.6	54.4	34.7	80	60	Chlorination by-product
DBP-08	ppb	82.2	67.5	79.5	52.6	65.9	49.0	58.0	36.3	80	60	Chlorination by-product
* TTHMs – 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 systems and may have an increased risk of getting cancer. The City of Tyler received Notices of Violation for exceeding the maximum contaminant level for THM in 1 <sup>st</sup> quarter and HAA5 in 1 <sup>st</sup> and 2 <sup>nd</sup> quarters of 2016.												
Parameter		Units	Yearly Average				Yearly Max	MCL	MCLG	Violation		
Chloramines		ppm	1.75				3.63	4	4	No		
Total Coliform Bacteria		Less than 5% per month				3.4	5%	0%	No			
Fecal coliform / <i>E. coli</i>		No positives for 2016		MCL = 5% of routine monthly samples are positive for total coliform bacteria or a routine sample and a repeat sample are total coliform positive and one is also fecal coliform or <i>E. coli</i> positive.								
Fecal coliforms and <i>E. coli</i> are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.												
Regulated at the Treatment Plant												
Parameter		Limit (Treatment Technique)		Level Detection	MCL/MCLG	Violation		Source				
Turbidity		Highest Single Measurement		1.00 NTU	0.29 NTU	N/A		No		Soil runoff		
		Lowest Monthly Percent Meeting Limit		Less than or equal to 0.30 NTU	100%	N/A		No		Soil runoff		
Turbidity is the cloudiness of the water caused by suspended particles. We monitor turbidity because it is a good indicator of the effectiveness of our settling and filtration processes. All TCEQ and EPA turbidity requirements were met in 2016.												
Regulated at Treatment Plant and Wells												
Parameter		Units	Max	Range	MCL	MCLG	Violation		Source			
Barium		ppm	0.088	0.049 - 0.088	2	2	No		Erosion of natural deposits			
Fluoride		ppm	0.501	0.0 - 0.501	4	4	No		Additive for dental hygiene			
Nitrate		ppm	0.378	0.0 - 0.378	10	10	No		Fertilizer runoff; Erosion of natural deposits			
Cryptosporidium												
Cryptosporidium is a tiny intestinal parasite found naturally in the environment. It is spread by human and animal waste. If ingested, cryptosporidium may cause cryptosporidiosis, an abdominal infection (symptoms include nausea, diarrhea, and abdominal cramps). Some of the ways cryptosporidium can be spread include drinking contaminated water, eating contaminated food that is raw or undercooked, exposure to the feces of animals or infected individuals (i.e. changing diapers without washing hands afterward), or exposure to contaminated surfaces. Not everyone exposed to the organism becomes ill. During 2016, Tyler tested for cryptosporidium in both untreated and treated water. Cryptosporidium has not been found in the Tyler treated drinking water. Tyler works to protect the watershed from contamination and optimizes the treatment process. Although Tyler's water treatment process removes cryptosporidium, immuno-compromised persons should consult their physician regarding appropriate precautions to avoid infection.												
Unregulated Parameters												
Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of the unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. Any unregulated contaminants detected are reported in the following table. For additional information and data visit <a href="http://www.epa.gov/safewater/ucmr/ucmr2/index.html">http://www.epa.gov/safewater/ucmr/ucmr2/index.html</a> , or call the Safe Water Hotline at (800-426-4791).												
Parameter		Units	City of Tyler Annual Average		City of Tyler Annual Range		MCL	MCLG				
N-Nitrosodiethylamine		ppb	ND		ND		N/A	N/A				
Bromodichloromethane		ppb	13.80		7.20 – 19.10		N/A	N/A				
Bromoform		ppb	ND		ND		N/A	N/A				
Chloroform		ppb	40.50		19.40 – 65.50		N/A	N/A				
Dibromochloromethane		ppb	3.40		1.60 – 6.20		N/A	N/A				
Secondary and Other Constituents												
Parameters		Units	Average	Range	Maximum Secondary Constituent Level							
Alkalinity, Total		ppm	23.80	21.30-26.20	N/A							
Alkalinity, Bicarb.		ppm	23.80	21.30-26.20	N/A							
Aluminum		ppm	0.200	ND-0.300	0.20							
Conductivity		umho/cm	231	201-261	N/A							
Hardness, Total		ppm	114	68-193	N/A							
Total Dissolved Solids		ppm	144	131-156	500							
Total Organic Carbon		ppm	3.17	2.35-3.98	N/A							
Calcium		ppm	37	23-59	N/A							
Chloride		ppm	11.75	9.50-14.00	300							
Magnesium		ppm	5.20	2.10-11.20	N/A							
Manganese		ppm	0.027	0.001-0.013	.05							
Sodium		ppm	40.04	6.43-101	N/A							
Iron		ppm	0.080	<0.020-0.133	0.30							
Nickel		ppm	0.001	ND-0.002	N/A							
Sulfate		ppm	56.80	44.90-68.70	300							
Zinc		ppm	0.003	ND-0.003	5.0							
Monochloroacetic acid		ppb	3.01	ND-13.50	N/A							
Dichloroacetic acid		ppb	22.33	6.20-30.80	N/A							
Trichloroacetic acid		ppb	13.29	2.00-21.40	N/A							
Monobromoacetic acid		ppb	0.19	ND-1.60	N/A							
Dibromoacetic acid		ppb	0.27	ND-1.40	N/A							
Bromochloroacetic acid		ppb	4.18	ND-5.90	N/A							
Other Constituents												
Parameters		Units	Result	MCL	MCLG							
Antimony		ppb	ND	0.006	0							
Arsenic		ppb	ND	0.010	0							
Beryllium		ppb	ND	0.04	0							
Cadmium		ppb	ND	0.05	0							
Chromium		ppb	0.001	0.100	<10.00							
Mercury		ppb	ND	0.002	<1.00							
Selenium		ppb	ND	0.50	<1.00							
Silver		ppb	ND	0.10	0							
Thallium		ppb	ND	0.002	0							
Radioactive Parameters												
Gross Alpha Emitters (2016)		pCi/l	<3.0	15	Source: Decay of natural & manmade deposits							
Gross Beta Emitters (2016)		pCi/l	4.0	50								
Radium 228 (2016)		pCi/l	<1.0	5								
Organic Compounds												
Parameters		Units	Average	Range	MCL	MCLG		Source				
No organic compounds were detected.												