

# 2018 Water Quality Report







## Message From Director

Our top priority is providing a safe, reliable and affordable supply of drinking water to our growing customer base, which includes both retail and wholesale customers.

This 2018 annual Water Quality Report provides a year-end summary of our drinking water, monitoring and testing data, along with details about where Fort Worth water comes from, the water treatment process, and how it is distributed to customers.

We are proud of the drinking water we provide, which is a result of the investment in advanced treatment processes at our water plants coupled with the knowledge and dedication of our water utility employees. The 2018 report once again shows full compliance with drinking water standards.

The vast majority of our employees (including myself) are also customers—meaning that we utilize the tap water daily for drinking, cooking, brushing teeth and washing clothes—just like you do. We have a personal stake in providing the best quality water at an affordable price.

We understand the trust the public places in us to provide safe drinking water, and therefore, would recommend reviewing this annual report. The requirements for providing you this information do not always make the information easy to read or understand, so please feel free to contact us at 817-392-4477 or [wpe@FortWorthTexas.gov](mailto:wpe@FortWorthTexas.gov) if you have questions.💧



With kind regards,

Chris Harder, Director  
Fort Worth Water

### Compromised immune systems may be more vulnerable

You may be more vulnerable than the general population to certain microbial contaminants, such as *Cryptosporidium*, in drinking water. Infants, some elderly, or immunocompromised 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.💧

Cover photo by Nikki Dacy





 The Trinity River flows through Fort Worth and continues all the way to the Trinity Bay outside of Houston, TX. *Photo: Water archive*

## Where does my water come from?

**S**upplying water to the nation's 15th largest city is no easy feat and the challenges going forward as Fort Worth continues to grow will become even greater as demand for water increases. Sure, we see water in many places, such as the lakes, rivers and streams that dot the Texas landscape and think our water supply is plentiful. That's not the case. Water is a precious commodity and it takes so much more to get clean, quality water to your kitchen faucet than just pumping it from those sources.

Currently, Fort Worth's water supply comes from Lake Worth, Lake Bridgeport, Eagle Mountain Lake, Benbrook Lake, Richland Chambers Reservoir, Cedar Creek Reservoir and the Clear Fork of the Trinity River. Fort Worth owns Lake Worth and Benbrook Lake is the responsibility of the U.S. Army Corps of Engineers. The Tarrant Regional Water District owns the four remaining lakes as well as the water rights to them.

### **Rainfall and lake levels**

Lakes around Fort Worth fill slower than lakes in East Texas. Locally, the average annual rainfall totals about 34 inches compared to 40 inches a year south of Dallas where Richland Chambers and Cedar Creek reservoirs are located.

TRWD constructed Cedar Creek Lake in the 1960s, and in 1972, The Rolling Hills plant began treating drinking water. In 2018, the city bought 71,026,944,466 gallons of raw water from TRWD, of which 18,899,060,764 gallons came from these two reservoirs.

Fort Worth can treat 500 million gallons of drinking water a day. The utility provides water to more than 1.2 million people in Fort Worth and surrounding areas, which include 30 water wholesale customers, 23 wastewater wholesale customers and three reclaimed water wholesale customers.

### **TRWD monitors raw water**

While Fort Worth, the USACE and TRWD own the lakes, the TRWD is in charge of monitoring the quality of the raw water in all of them. Every month, staff tests the water for *Cryptosporidium*, *Giardia Lamblia* and viruses. The source of these parasites and viruses is human and animal fecal waste found in the watersheds.

TRWD's 2018 testing showed low levels of *Cryptosporidium*, *Giardia Lamblia* and viruses in some of the water supply. The disinfection process in water treatment removes viruses from the water. *Cryptosporidium* and *Giardia Lamblia* are removed through the disinfection and/or filtration process. ►





**TCEQ assesses raw water supply**

The Texas Commission on Environmental Quality annually completes an assessment of Fort Worth’s source water. TCEQ classified Fort Worth as “potentially high” in 2018.

A high susceptibility means there are activities near the source water or watershed that make it very likely that chemical components may come in to contact with the source water. It does not mean that there are any health risks present.

TCEQ’s Drinking Water Watch database provides more details about the assessments at <https://dww2.tceq.texas.gov/DWW/>.

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Secondary Constituents		
These items do not relate to public health but rather to the aesthetic effects. These items are often important to industry.		
Compound	Measure	Your water
Bicarbonate	ppm	108 to 144
Calcium	ppm	42.0 to 52.1
Chloride	ppm	11.8 to 40
Conductivity	µmhos/cm	302 to 471
pH	units	8.6 to 8.7
Magnesium	ppm	3.20 to 8.64
Sodium	ppm	14.8 to 30.3
Sulfate	ppm	26.3 to 36.5
Total Alkalinity as CaCO <sub>3</sub>	ppm	98.2 to 136
Total Dissolved Solids	ppm	156 to 251
Total Hardness as CaCO <sub>3</sub>	ppm	118 to 162
Total Hardness in Grains	grains/gallon	7 to 9

- Potential raw water impurities**
- 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, 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.

Unregulated Contaminants						
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.						
Compound	Measure	MRDL	MRDLG	Your Water	Range of Detects	Common Sources of Substance
Chloral Hydrate	ppb	Not regulated	N/A	0.34	0.12 to 0.34	By-product of drinking water disinfection
Bromoform	ppb	Not regulated	0	5.15	0 to 5.15	
Bromodichloromethane	ppb	Not regulated	0	7.08	1.99 to 7.08	
Chloroform	ppb	Not regulated	70	8.40	2.43 to 8.40	
Dibromochloromethane	ppb	Not regulated	60	6.94	1.31 to 6.94	By-products of drinking water disinfection; not regulated individually; included in Total Trihalomethanes
Dibromoacetic Acid	ppb	Not regulated	N/A	4.3	1 to 4.3	
Dichloroacetic Acid	ppb	Not regulated	0	8.5	3.9 to 8.5	
Monobromoacetic Acid	ppb	Not regulated	N/A	2.3	0 to 2.3	
Monochloroacetic Acid	ppb	Not regulated	70	3.9	1.5 to 3.9	
Trichloroacetic Acid	ppb	Not regulated	20	2.2	0 to 2.2	

## Drinking Water Quality Test Results

Compound	Measure	MCL	MCLG	Your water	Violation	Common Sources of Substance
Turbidity	NTU	TT=1	N/A	0.5	No	Soil runoff (Turbidity is a measure of the cloudiness of water. It is monitored because it is a good indicator of the effectiveness of the filtration system.)
		TT= Lowest monthly % of samples ≤ 0.3 NTU		99.9%	No	
Compound	Measure	MCL	MCLG	Your water	Violation	Common Sources of Substance
Total Coliforms (including fecal coliform & E. coli)		TT	0	1.1	No	Coliforms are naturally present in the environment as well as feces; fecal coliforms and E. coli only come from human and animal fecal waste.
Beta/photon emitters <sup>1</sup>	pCi/L	50	0	5.6	No	Decay of natural and man-made deposits
Combined Radium <sup>1</sup>	pCi/L	5	0	2.5	No	Erosion of natural deposits
Uranium <sup>1</sup>	ppb	30	0	1.1	No	Erosion of natural deposits
Arsenic	ppb	10	0	1.1	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Atrazine	ppb	3	3	0.1	No	Runoff from herbicide used on row crops
Barium	ppm	2	2	0.07	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Cyanide	ppb	200	200	84.3	No	Discharge from plastic and fertilizer factories; discharge from steel and metal factories
Fluoride	ppm	4	4	0.61	No	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Nitrate (as Nitrogen)	ppm	10	10	0.67	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (as Nitrogen)	ppm	1	1	0.02	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Bromate	ppb	10	0	2.6	No	By-product of drinking water disinfection
Haloacetic Acids	ppb	60	N/A	12.1	No	By-product of drinking water disinfection
Total Trihalomethanes	ppb	80	N/A	17.1	No	By-product of drinking water disinfection
Compound	Measure	MRDL	MRDLG	Your water	Violation	Common Sources of Substance
Chloramines	ppm	4	4	3.26	No	Water additive used to control microbes
Compound	Measure	MCL	MCLG	Low	Average	Common Sources of Substance
Total Organic Carbon	TT = % removal	N/A	1	1	No	Naturally occurring

It is used to determine disinfection by-product precursors. Fort Worth was in compliance with all monitoring and treatment technique requirements for disinfection by-product precursors. A removal ratio of 1 in SUVA calculations is considered passing.

<sup>1</sup>Because Fort Worth historically has had low levels of radionuclides in its water, TCEQ requires this monitoring occur only once every six years. The test results shown above are from 2017. The next monitoring will occur in 2023.



UCMR 4								
Fort Worth’s testing detected only four of the 30 compounds included in the fourth round of unregulated contaminant monitoring. The detections were one metal and the three haloacetic acid disinfection byproduct groups. 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.								
Compound	Measure	Average	Range of Detects	Common Sources of Substance				
Manganese	ppb	0.27	0 to 1.29	Naturally occurring; used in drinking water and wastewater treatment; used in steel production, fertilizer, batteries and fireworks				
HAA5	ppb	6.42	2.6 to 18.62	Byproducts of drinking water disinfection				
HAA6Br	ppb	4.44	0 to 8.88	Byproducts of drinking water disinfection				
HAA9	ppb	9.3	2.6 to 22.98	Byproducts of drinking water disinfection				
Haloacetic Acid Groups								
This table includes all of the compounds that comprise each of the haloacetic acid groups. Compounds that are not detected are usually not listed in the charts in this report; however, those undetected are listed below to provide complete information on the compounds that comprise each of the three groups in the table above.								
Compound	Measure	Average	Your Water	Range of Detects	HAA5	HAA6Br	HAA9	Common Sources of Compound
Dichloroacetic Acid	ppb	4.62	7.88	2.60 to 7.88	HAA5		HAA9	By-products of drinking water disinfection
Monochloroacetic Acid	ppb	0.24	6.22	0 to 6.22	HAA5		HAA9	
Trichloroacetic Acid	ppb	0	0	0 to 0	HAA5		HAA9	
Monobromoacetic Acid	ppb	0	0	0 to 0	HAA5	HAA6Br	HAA9	
Dibromoacetic acid	ppb	1.56	4.52	0 to 4.52	HAA5	HAA6Br	HAA9	
Bromochloroacetic acid	ppb	2.88	4.36	0 to 4.36		HAA6Br	HAA9	
Bromodichloroacetic acid	ppb	0	0	0 to 0		HAA6Br	HAA9	
Chlorodibromoacetic acid	ppb	0	0	0 to 0		HAA6Br	HAA9	
Tribromoacetic acid	ppb	0	0	0 to 0		HAA6Br	HAA9	

Lead & Copper						
Contaminant	Year of testing	Measure	90th percentile	# of sites exceeding action level	Action Level	Common Sources of Substance
Lead	2016	ppb	3.2	0	15	Corrosion of household plumbing systems; erosion of natural deposits
Copper	2016	ppm	0.6	0	1.3	

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Because drinking water comes from natural sources, it is exposed to pollutants and contaminants. Contaminants that may be in source water before treatment include microbes, herbicides, radioactive materials, and inorganic and organic chemicals. The presence of these does not necessarily mean the water poses a health risk, but that they can cause unpleasant odors and tastes.

Contaminants may be found in drinking water that may cause taste, color, or odor problems. These types of problems are not necessarily causes for health concerns.

For more information on taste, odor or the color of your drinking water, please contact the Water Department at 817-392-4477 or email [wpe@FortWorthTexas.gov](mailto:wpe@FortWorthTexas.gov).

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 EPAs Safe Drinking Water Hotline at (800) 426-4791.💧

# Fort Worth targets lead lines

The Fort Worth Water Department's goal to eliminate all city-owned lead service lines by 2021 is well underway. For many years, crews removed lead lines as they were found during routine maintenance activities. The pace on those efforts, though, increased a few years ago when the city began collecting the GPS coordinates of meters citywide.

While crews recorded the meter coordinates, they also noted the service line material on both sides of the meter. That work was 75 percent completed in mid-May. So far, crews have recorded about 1,200 lead service lines on the city side of the meter and 16 on the customer side. Only one location had lead on both sides of the meter. As of March 2019, approximately 98 percent of the water meters inside Loop 820 have been surveyed.

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Fort Worth understands the importance of eliminating lead service lines. Elevated lead levels have been known to cause serious health problems, especially for pregnant women and young children. Lead in drinking water can come from lead service lines and lead-containing home plumbing components. It's the customer's responsibility when it comes to lead used on their side of the meter.

The utility is committed to doing its part to make sure all city-side lead service lines are removed and that residents are informed about the risks and ways to reduce exposure. Every time a lead service line is identified, staff provides the customer with information about the replacement of lead lines and details on how to minimize the potential for lead exposure. Risks are greatly reduced by simply flushing the tap for 30 seconds to 2 minutes before using water for drinking or cooking, especially after water has been sitting for several hours.

Customers are notified in writing when city-side lead service lines will be replaced as part of a capital improvement project.

Fort Worth offers customers with known lead service lines a free lab test. If you do not have known lead service lines, the cost is \$15 per water sample. Call 817-392-4477 to make arrangements.

Information on lead in drinking water, testing methods and steps you can take to minimize your exposure is available from the Safe Drinking Water Hotline at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead) or by calling 1-800-426-4791.

To meet federal compliance rules, Fort Worth samples 50 homes every three years for lead and copper. Compliance sampling was last performed in 2016 and will be performed in 2019. Fort Worth achieves corrosion control through pH adjustment.💧

Additional info at: [www.FortWorthTexas.gov/water/lead](http://www.FortWorthTexas.gov/water/lead)





# Conservation First

Imagine if about 760,000 Fort Worth residents decided not to take a bath one day. The effort, while not recommended, would save 38 million gallons of water, or the amount the city’s conservation efforts reached in 2018.

On average, each resident used 163 gallons of water a day last year, a decline of 48 gallons a day, from 216 gallons a day recorded in 2006. That’s a 22 percent drop.

The savings came from several programs, including one that won a prestigious Environmental Protection Agency award. The city’s conservation programs have been in place for more than a decade, all contributing to the decline in the amount of water used by individuals daily.

In 2018, the EPA named Fort Worth and its water utility a WaterSense Partner of the Year for its creativity in promoting water conservation.

The conservation staff collaborated with the agency on a 2017 Fix a Leak Week Hispanic outreach pilot program that involved developing materials in partnership with WaterSense, the EPA sponsored label for water-efficient products and resources.

The materials created here are now used nationwide.

In another program, nearly 3,700 high-efficiency toilets were distributed to Fort Worth residents who were trading in much older, high water use models.

Replacing high water-use toilets represents the bulk of the city’s water savings.

Other water savings come from tips and suggestions water conservation staff offer to residents who ask for evaluations on their irrigation systems. The evaluation is free to Fort Worth customers.

Last year, more than 500 evaluations were performed, saving hundreds of thousands of gallons of water. The evaluations include looking for leaks and suggestions for more efficient operations.

In the water loss audit submitted to the Texas Water Development Board for calendar year 2018, the Fort Worth system lost an estimated 7.9 billion gallons of water from the almost 69 billion gallons of water purchased.

Fort Worth’s Water Conservation Plan addresses water loss and has goals for lowering this over time. If you have any questions about the water loss audit, please contact Water Conservation Manager Micah Reed at 817-392-8211 or email [Micah.Reed@FortWorthTexas.gov](mailto:Micah.Reed@FortWorthTexas.gov).



WaterSense®  
Partner of the Year

Per capita usage  
▼ 34%

In 2018 saved  
38 million  
gallons

 Keeping an up to date, well-maintained irrigation system will help prevent water waste.



## Table Abbreviations

(Tables located on pages 5-6 & 9)

**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.

**N/A:** not applicable/does not apply

**Nephelometric Turbidity Unit (NTU):** a measure of water turbidity or clarity

**Picocuries per liter (pCi/L):** a measure of radioactivity

**Parts per billion (ppb):** Or represented as micrograms per liter (µg/L)

**Parts per million (ppm):** Or represented as milligrams per liter (mg/L)

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

## Want to know more about water?



Fort Worth Water has employees who volunteer to talk at Career Day presentations as well as work events for the department, city and community. The H<sub>2</sub>O Heroes talk about a typical work day, education training requirements and what students need to focus on in studies to have a career with the water department.

If you are interested in a school or community group presentation, email: [wpe@FortWorthTexas.gov](mailto:wpe@FortWorthTexas.gov)

## Contact Us

### Water Customer Service

817-392-4477

7 a.m. — 7 p.m. Monday–Friday

**24-Hour Emergencies** select Option 1

H2Online Home online billing:

<https://h2online.fortworthtexas.gov/>

[Click2GovCX/index.html](https://www.click2gov.com/cx/index.html)

### Water Department Administrative Office

Fort Worth City Hall

200 Texas Street, 2nd floor

Fort Worth, TX 76102

[www.FortWorthTexas.gov/water](http://www.FortWorthTexas.gov/water)

[www.SaveFortWorthWater.org](http://www.SaveFortWorthWater.org)

*The Water Department is part of the City of Fort Worth, Texas. Council meetings are open to the public and take place three times a month, on Tuesdays, at 7 p.m. in the council chambers/second floor of city hall. See the City Calendar.*

[www.fortworthtexas.gov/calendar/council](http://www.fortworthtexas.gov/calendar/council)

### Other Resources

Environmental Protection Agency

[www.epa.gov](http://www.epa.gov)

Texas Commission on Environmental Quality

[www.tceq.texas.gov](http://www.tceq.texas.gov)

Texas Water Development Board

[www.twdb.texas.gov](http://www.twdb.texas.gov)

American Water Works Association

[www.awwa.org](http://www.awwa.org)

Drink Tap

[www.drinktap.org](http://www.drinktap.org)



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