



Drinking Water Quality Report

Year 2011 Data



Only Tap Water **Delivers**

- ...public health protection
- ...fire protection
- ...support for the economy
- ...the overall quality of life we enjoy





Frequently Asked Questions About This Report

Why am I receiving this report?

In 1996, Congress amended the Safe Drinking Water Act to include a requirement that water utilities annually notify customers about their drinking water quality.

The law is quite specific regarding delivery methods and what information must be included. Large utilities also must post it on their websites.

Cryptosporidium Testing Shows Low Detections in Raw Water from Lakes

Tarrant Regional Water District monitors the raw water at all intake sites for *Cryptosporidium*, a microbial parasite common in surface water. The source is human and animal fecal waste in the watershed.

The 2011 monthly testing revealed very low levels. The testing methods used cannot determine if the parasite is dead and inactive or alive and capable of causing cryptosporidiosis. This is an abdominal infection that causes nausea, diarrhea and abdominal cramps after indigestion.

The drinking water treatment process is designed to remove *Cryptosporidium* through filtration.

Information for Immunocompromised People

The following information is not meant to alarm or scare you. It is meant to make you aware. The exact wording shown below is required by state regulations.

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

Can I stop receiving a paper copy?

No. At this time, water utilities are required to mail a copy of the report to every customer that receives a water bill. Delivery only by e-mail or online posting are not acceptable distribution options under the federal and state regulations.

Who receives this report?

The report is sent to all customers who have a water account. It is not sent to customers with wastewater, storm water or sanitation accounts but no water account.

The law requires utilities make a good faith effort to distribute this report to consumers that are not customers. Consumers are individuals that receive our water but not a bill, such as people who work in Fort Worth and live elsewhere or anyone living in an apartment complex receiving our water.

For this reason, the report is mailed to multi-family dwellings and copies can be obtained at Fort Worth libraries and recreation centers.

Why is this report in two languages?

The regulations require the report be available in other languages when certain criteria are met. The Fort Worth City Council has desired the city produce materials in both languages because a large portion of our city is Spanish-speaking.

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 Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Where We Get Our Water & What's In It

Fort Worth uses surface water from Lake Worth, Eagle Mountain Lake, Lake Bridgeport, Richland Chambers Reservoir, Cedar Creek Reservoir and the Clear Fork Trinity River (from Lake Benbrook).

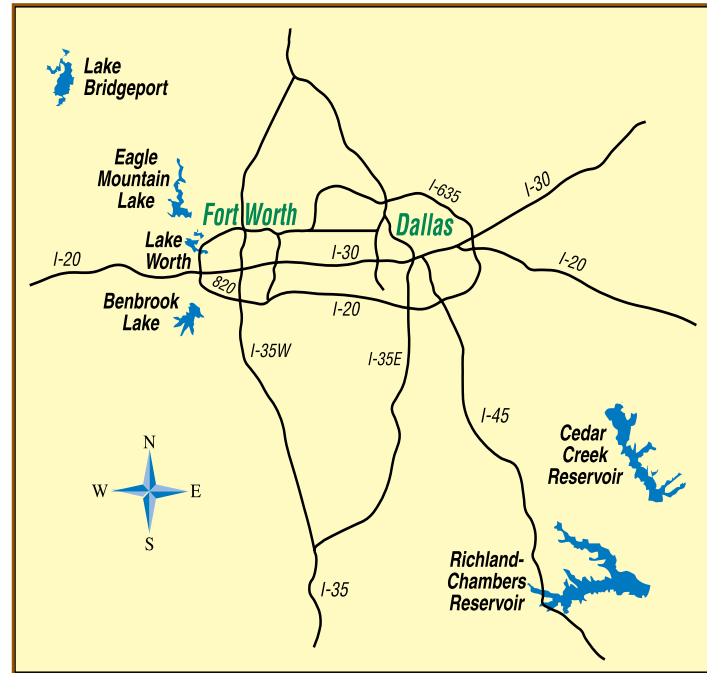
Fort Worth owns Lake Worth. The U.S. Army Corps of Engineers is responsible for Benbrook Lake. The other four lakes are owned and operated by Tarrant Regional Water District (TRWD).

As water travels over the land or through the ground, it dissolves naturally occurring minerals and radioactive material. Water also can pick up substances resulting from animal waste or human activity.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate the water poses a health risk.

Contaminants that may be present in source water before treatment include microbes, inorganic contaminants, pesticides, herbicides, radioactive materials and organic chemical contaminants.

In addition, 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



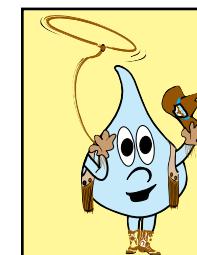
color of drinking water, please contact us at 817-392-4477 or wpe@fortworthtexas.gov.

To ensure tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ) regulate the amount of certain contaminants in water provided by public systems.

A Source Water Susceptibility Assessment for your drinking water sources is being updated by TCEQ. This information describes the susceptibility and types of contaminants that may come into contact with your drinking water source, based on human

activities and natural conditions. The information contained in the assessment allows us to focus our source water protection strategies. Some of this source water assessment information will be available on Texas Drinking Water Watch at <http://dww.tceq.state.tx.us/DWW>.

For more information on source water assessments and protection efforts at our system, please contact us.

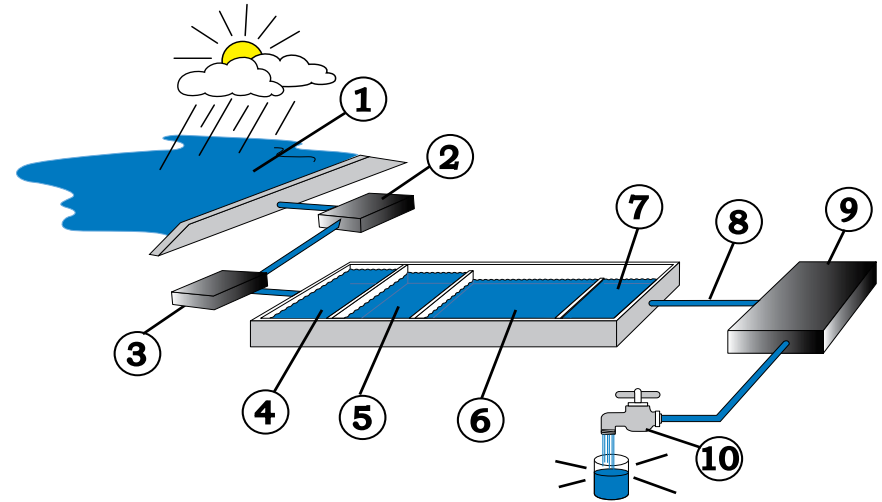


Did you know?

Community water supplies are tested every day. Tap water undergoes far more frequent testing than bottled water.

Treatment Steps for Protecting Public Health

1. Reservoirs: Fort Worth water comes from six lakes.
2. Raw Water Pump Station: Here water is pumped from the lake to the water treatment plant.
3. Primary Disinfection: Either ozone or monochloramine (chlorine and ammonia) is added to kill bacteria and viruses. The Eagle Mountain and Rolling Hills water treatment plants use ozone. The North Holly and South Holly water treatment plants use monochloramine.
4. Mixing Chamber: Chemicals, called coagulants and polymers, are added to the water to cause small particles to adhere to each other.
5. Coagulation Basin: The particulate matter begins to clump together.
6. Sedimentation Basin: Particles settle to the bottom of the basin and are removed.
7. Filters: Water is filtered through four feet of coal, sand and gravel.
8. Disinfection: Monochloramine is added to provide disinfection all the way to your faucet. The chlorine kills bacteria and viruses. Ammonia is added to reduce the chlorine odor and the amount of chlorine by-products created.
9. Clearwell Storage: Water is temporarily stored in tanks before it is pumped to the public.
10. Distribution: Drinking water reaches the public through more than 3,600 miles of pipeline.



Fort Worth Water Department

817-FW-24-HRS
(817-392-4477)

wpe@FortWorthTexas.gov

www.FortWorthTexas.gov/water

www.saveFortWorthwater.org

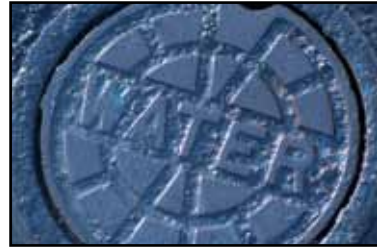
Administrative Office:

Fort Worth City Hall, 2nd Floor
1000 Throckmorton St.

The Water Department is part of the Fort Worth city government. The City Council meets each Tuesday at City Hall, 1000 Throckmorton St. The meetings are at 7 p.m. on the 1st & 2nd Tuesday of the month. The meetings are at 10 a.m. all other Tuesdays. Check the calendar online to make sure a meeting is not cancelled or rescheduled.

Fun Facts about Water and Infrastructure

The first municipal water filtration works opened in Paisley, Scotland in **1832**.



The Fort Worth water utility dates back to **1882**, when Captain B.B. Paddock started a private water company. The city acquired the utility in **1885**.

There are more than **56,000 community**, and **200,000** individual, water systems providing water to the public in the United States.



Fort Worth treated and pumped an average of **205.43 million** gallons a day in 2011.

Approximately **1 million** miles of pipes carry water through the United States and Canada. That's enough to travel from the Earth to the Moon and back—twice!

In Fort Worth, there are more than **3,500 miles** of water pipes. That's longer than the distance from Miami, Florida to Seattle, Washington.

The average person spends **less than 1%** from personal income for water, wastewater and water disposal services.

Each person uses an average of **160 gallons** of water per day.



Fort Worth retail and wholesale customers used a record **368.7 million** gallons on Aug. 3, 2011.

One gallon of water weighs **8.34 pounds**.

Each person is using **9,340 pounds** of water per week—that's more than the weight of an adult elephant!

More than **39,000 gallons** of water are used to manufacture a new car, including tires.

Water is the main ingredient in other beverages. For example, it takes **1,500 gallons** of water to make one barrel of beer.

It takes **300 million** gallons of water to produce a single day's supply of newsprint.

On average, Fort Worth residents and businesses use about **8.4 billion** gallons of water a year on their landscapes.

Above ground storage tanks ensure that water pressure is consistent and the **volume** is sufficient to fight fires.

Fort Worth has **12 elevated** tanks and **14 ground** tanks with a storage capacity of more than **90 million** gallons.



Drinking Water Quality Test Results

In the United States, water utilities monitor for more than 100 contaminants and must meet 91 regulations for water safety and quality. The following tables lists only those contaminants detected in Fort Worth's water. For a complete list of what is tested for in drinking water, visit <http://water.epa.gov/drink/contaminants/index.cfm#List>.

MCL: Maximum Contaminant Level - 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.

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.

MRDL: Maximum Residual Disinfectant Level - 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.

MRDLG: Maximum Residual Disinfectant Level Goal - 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.

NTU - Nephelometric Turbidity Unit; a measure of water turbidity or clarity.

pCi/L - Picocuries per liter; a measure of radioactivity.

ppb - Parts per billion or micrograms per liter (mg/L).

ppm - Parts per million or milligrams per liter (mg/L).

TT: Treatment Technique - a required process intended to reduce the level of a contaminant in drinking water.

Contaminant	Measure	MCL	2011 Level	Range of Detects	MCLG	Common Sources of Substance
Arsenic	ppb	10	1	0.3 to 1	0	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	ppm	2	0.06	0.04 to 0.06	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beta particles & Photon emitters	pCi/L	50	7.5	0 to 7.5	N/A	Decay of natural and man-made deposits of certain minerals that are radioactive and may emit forms of radiation known as photons and beta radiation
Fluoride	ppm	4	0.67	0.23 to 0.67	4	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Nitrate (measured as Nitrogen)	ppm	10	0.48	0.08 to 0.48	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (measured as Nitrogen)	ppm	1	0.01	0.01 to 0.01	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Bromate	ppb	10	7.95	0.45 to 7.95	0	By-product of drinking water disinfection
Haloacetic Acids	ppb	60	18.0	2.0 to 18.0	N/A	By-product of drinking water disinfection
Total Trihalomethanes	ppb	80	50.3	4.8 to 50.3	N/A	By-product of drinking water disinfection
Total Coliforms (including fecal coliform & E. coli)	% of positive samples	Presence in 5% or more of monthly samples	Presence in 0.4% of monthly samples	0 to 0.4%	0	Coliforms are naturally present in the environment as well as feces; fecal coliforms and E. coli only come from human and animal fecal waste.
Turbidity	NTU	TT	0.37 Highest single result 99.4% Lowest monthly % of samples ≤ 0.3 NTU	N/A	N/A	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.

Contaminant	Measure	MRDL	2011 Level	Range of Detects	MRDLG	Common Sources of Substance
Chloramines	ppm	4	3.2	1.2 to 4.5	4	Water additive used to control microbes
Contaminant	High	Low	Average	MCL	MCLG	Common Sources of Substance
Total Organic Carbon	1	1	1	TT = % removal	N/A	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.

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.

Contaminant	Measure	Range of Detects	2011 Level	MCL	MCLG	Common Sources of Substance
Chloral Hydrate	ppb	0.26 to 1.47	1.47	Not regulated	None	By-product of drinking water disinfection
Bromoform	ppb	0 to 2.0	2.0	Not regulated	None	By-products of drinking water disinfection; not regulated individually; included in Total Trihalomethanes on Page 5
Bromodichloromethane	ppb	1.7 to 18.7	18.7	Not regulated	None	
Chloroform	ppb	1.3 to 18.6	18.6	Not regulated	70	
Dibromochloromethane	ppb	1.1 to 11.5	11.5	Not regulated	60	
Monochloroacetic Acid	ppb	0 to 0	0	Not regulated	70	
Dichloroacetic Acid	ppb	2.0 to 12.5	12.5	Not regulated	None	By-products of drinking water disinfection; not regulated individually; included in Haloacetic Acids on Page 5
Trichloroacetic Acid	ppb	0 to 5.5	5.5	Not regulated	20	
Monobromoacetic Acid	ppb	0 to 0	0	Not regulated	None	
Dibromoacetic Acid	ppb	0 to 2.3	2.3	Not regulated	None	

Secondary Constituents

These items do not relate to public health but rather to the aesthetic effects. These items are often important to industry.

Item	Measure	2011 Range
Bicarbonate	ppm	99 to 123
Calcium	ppm	89 to 142
Chloride	ppm	16 to 33
Conductivity	µmhos/cm	366 to 427
pH	units	8.2 to 8.4
Magnesium	ppm	4 to 8
Sodium	ppm	14 to 22
Sulfate	ppm	23 to 36
Total Alkalinity as CaCO ₃	ppm	99 to 123
Total Dissolved Solids	ppm	210 to 245
Total Hardness as CaCO ₃	ppm	85 to 168
Total Hardness in Grains	grains/gallon	7 to 9

What You Should Know about Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Fort Worth drinking water does not have elevated lead levels.

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing.

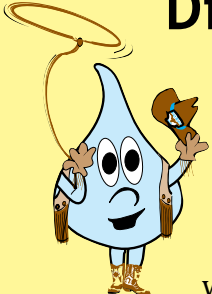
The city of Fort Worth is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components.

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 two minutes before using water for drinking or cooking.

If you are concerned about lead in your water, the Fort Worth Water Department Laboratory offers lead and copper testing to our customers. The cost is \$15 per sample for lead testing and \$15 per sample for copper testing. Call 817-392-4477 to make the 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 800-426-4791 or at www.epa.gov/safewater/lead.

Contaminant	Year of testing	Measure	90th percentile	# of sites exceeding action level	Action Level	Common Sources of Substance
Lead	2009	ppb	4.9	0	15	Corrosion of household plumbing systems; erosion of natural deposits
Copper	2009	ppm	0.39	0	1.3	
90th percentile value: 90% of the samples were at or below this value. EPA considers the 90th percentile value the same as an "average" value for other contaminants. Lead and copper are regulated by a treatment technique that requires systems to control the corrosiveness of their water.				If more than 10% of tap water samples exceed the action level, water systems must take additional steps. Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.		



Did you know?

A safe water supply is critical to protecting public health and is the first obligation of all water suppliers. Before our modern water systems, diseases such as cholera and dysentery were part of everyday life.

I'm more than just another tall drink of water.

If only our tap water could talk to us. It might remind us that tap water is more than just a healthy, refreshing drink. It also fights fires, supports our economy and provides us with the high quality of life we enjoy.

Our water bills pay to keep our community tap water safe, reliable and there for us — 24/7 without fail. For more information about what your tap water delivers, visit www.FortWorthTexas.gov/water.

Only Tap Water Delivers



Presented in cooperation with



We don't often pause to consider the incredible value of a safe, reliable water supply — and the water system that delivers it — in our everyday lives. But consider that tap water does what no other water can.



Only Tap Water Delivers ...

... public health protection.

In a world where an estimated 3 million people die every year from preventable waterborne disease, our water systems allow us to drink from virtually any public tap with a high assurance of safety. Each community water supply meets rigorous federal and state health-protective standards.

... fire protection.

A well-maintained water system is critical in protecting our communities from the ever-present threat of fire. A system that provides reliable water at an adequate pressure can be the difference between a small fire and an urban inferno. The ability to suppress fires also influences new home construction, business location decisions and insurance rates.

... support for the economy.

Businesses and housing developments cannot succeed without a safe and sustainable water supply. Tap water is critical to businesses' day-to-day operations and is often a primary ingredient in the products they create. The incredible value of water is magnified when populations expand or face drought conditions.

... the overall quality of life we enjoy.

Any measure of a successful society — low mortality rates, economic diversity, productivity, and public safety — is in some way related to access to safe water. In North America, we take for granted that safe water is always accessible to drink, to wash our clothes, to water our lawns and for a myriad of other purposes. When water service is interrupted, we're all reminded of the extraordinary value our water service provides.

