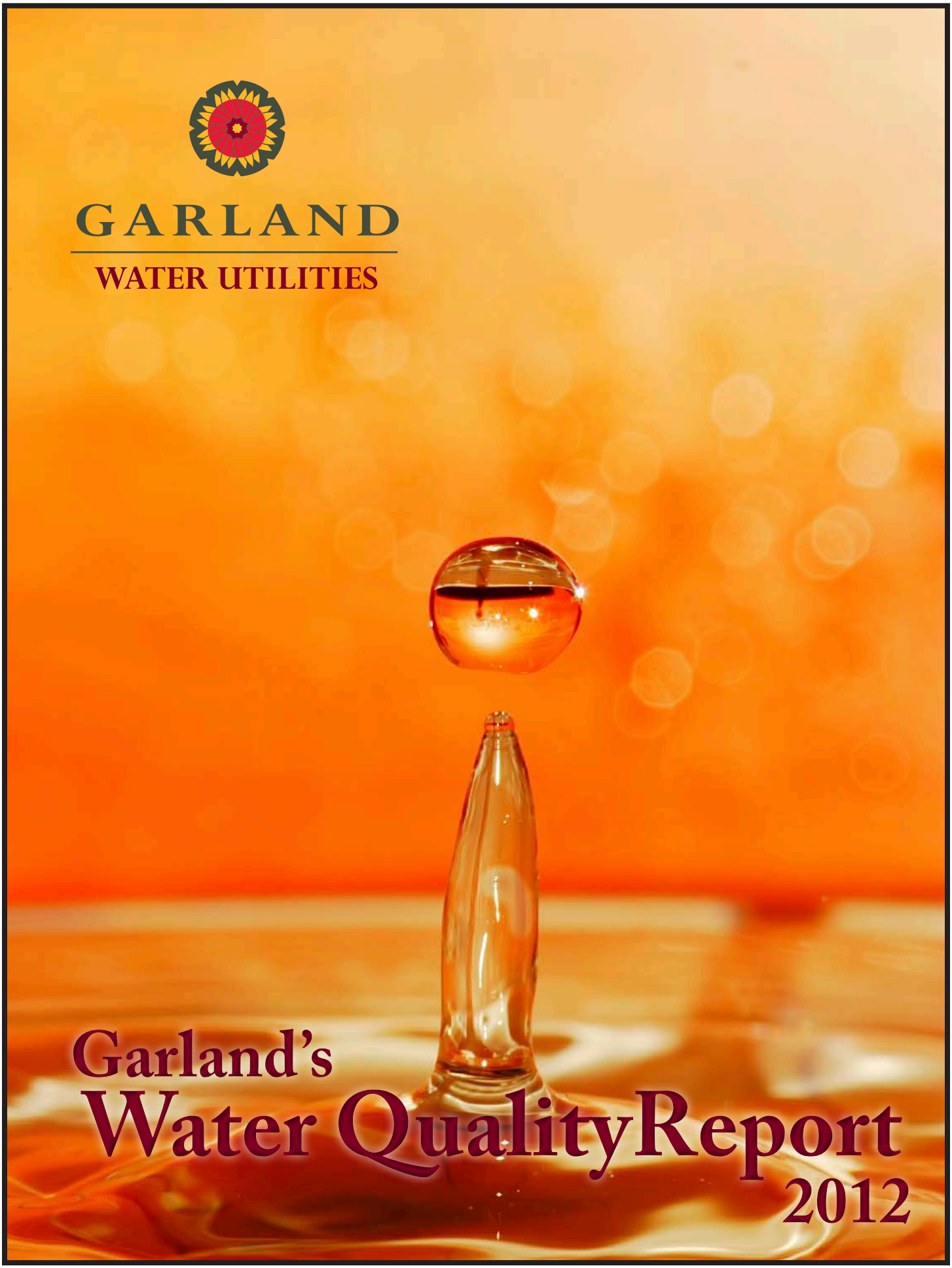
GARLAND

WATER UTILITIES



Garland's Water Quality Report 2012

In 1996 Congress amended the Safe Drinking Water Act requiring community systems to provide customers with an annual report of the quality of their drinking water. We are proud to present our annual Water Quality Report. This report covers all testing completed from January 1 through December 31, 2012.

Garland Water Utilities is a municipal water distribution and wastewater collection utility, owned by the City of Garland. It stores purchased water and delivers it to you on demand. Garland Water Utilities tests the water to ensure quality, maintains its infrastructure (pipes and pumps) required to delivery water and removes, treats and tests wastewater prior to releasing it back into the water source or selling it.

A copy of this report is available in a printable version on our website at: **www.garlandwater.com**

Español: Este informe incluye informacion importante sobre el agua potable. Si tiene preguntas o comentarios sobre este informe en espanol, favor delespaol, favor de llamar al tel. 972-205-3213 para hablar con una persona bilingue en español.

Where Does My Water Come From?

All of Garland's treated water is purchased from North Texas Municipal Water District (NTMWD) which uses surface water from five sources: Lavon Lake, Jim Chapman Lake, Lake Tawakoni, Lake Texoma and the East Fork Raw Water Supply Project commonly known as the "wetland". Lavon Lake is currently its primary source of raw water. NTMWD conducts daily tests on both the raw water in Lake Lavon and the treated water they deliver to the City of Garland. The treated water is stored in eight ground storage tanks, three elevated storage tanks and 1,115 miles of pipe network owned and operated by the City of Garland Water Utilities. A centralized water control system and customer call center with on-call maintenance assures that safe, high quality water is available to our customers 24 hours a day, 7 days a week, 365 days a year.

What Can Be In My Water?

To ensure that tap water is safe to drink, the U.S. Environmental Protection Agency prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration 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 these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap 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 can acquire naturally occurring minerals, in some cases, radioactive material; and substances resulting from the presence of animals or from human activity. Substances 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 or wildlife; **Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may 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 which may also come from gas stations, urban storm water runoff, and septic systems; **Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

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 our business office. For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Hotline at 800-426-4791.

Sampling Results

During the past year several hundreds of water samples have been taken in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The results of this testing is displayed in the table below. The state allows us to monitor for certain substances less than once per year because the concentrations of those substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which it was taken. This report includes a list of all substances whose range of levels were greater than zero. For a complete list of tested substances go to www.garlandwater.com.

Coliform Bacteria

Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest No. of Positive	Fecal Coliform or E. Coli Maximum Contaminant Level	Total No. of Positive E. Coli or Fecal Coliform Samples	Violation	Likely Source of Contamination
0	5% Positive Samples	0	1.9	0	**No**	Naturally present in the environment.

NOTE: Reported monthly tests found no fecal coliform bacteria. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. Maximum level of 5% Total Coliform.

Regulated Contaminants

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Total Haloacetic Acids (HAA5)	2012	19.56	9.7 - 38.9	No goal for the total	60	ppb	**No**	By-product of drinking water chlorination.
Total Trihalomethanes (TThm)	2012	37.37	23.1 - 48.8	No goal for the total	80	ppb	**No**	By-product of drinking water chlorination.

NOTE: Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future.

Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Antimony	2012	0.256	0.195 - 0.256	6	6	ppb	**No**	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder; and test addition.
Arsenic	2012	1.1	0.951 - 1.1	0	10	ppb	**No**	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Barium	2012	0.0389	0.0364 - 0.0389	2	2	ppm	**No**	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Chromium	2012	2.55	2.35 - 2.55	100	100	ppb	**No**	Discharge from steel and pulp mills; erosion of natural deposits.
Fluoride	2012	0.66	0.50 - 0.66	4	4	ppm	**No**	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate (measured as Nitrogen)	2012	1.04	0.08 - 1.04	10	10	ppm	**No**	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits.

Nitrate Advisory: Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

Selenium	2012	0.244	0.232 - 0.244	50	50	ppb	**No**	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.

Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Beta/photon emitters	4/29/2010	4.4	4.4 - 4.4	0	50	pCi/L	**No**	Decay of natural and man-made deposits.

Synthetic organic contaminants including pesticides and herbicides	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Atrazine	2012	0.71	0 - 0.71	3	3	ppb	**No**	Runoff from herbicide used on row crops.
Di (2-ethylhexyl) adipate	2012	0.74	0 - 0.74	400	400	ppb	**No**	Discharge from chemical factories.
Simazine	2012	0.38	0.11 - 0.38	4	4	ppb	**No**	Herbicide runoff.

Turbidity

	Limit (Treatment Technique)	Level Detected	Violation	Likely Source of Contamination
Highest single measurement	1 NTU	0.62 NTU	**No**	Soil runoff.
Lowest monthly percentage (%) meeting limit	0.3 NTU	98.16%	**No**	Soil runoff.

NOTE: Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

Table Definitions

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

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. MCLSs 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.

ND (Not Detected) Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units) Measurement of the clarity or turbidity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

PPM (Parts Per Million) One part substance per million parts water (or milligrams per litter - mg/L)

Unregulated Contaminants

Unregulated contaminants are those which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the 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 http://www.epa.gov/safewater/ucmr/ucmr2/index.html, or call the Safe Drinking Water Hotline at 800-426-4791.

Maximum Residual Disinfectant Level

Disinfectant Type	Year	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Units	Source of Chemical
Chlorine Residual (Chloramines)	2012	3.73	0.5	4.6	4.0	<4.0	ppm	Disinfectant used to control microbes.
Chlorine Dioxide	2012	0	0	0.1	0.8	0.8	ppm	Disinfectant.
Chlorite	2012	0.42	0.08	0.81	1.0	N/A	ppm	Disinfectant.

Total Organic Carbon

	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Source Water	2012	4.94	4.22 - 4.94	ppm	Naturally present in the environment.
Drinking Water	2012	4.16	2.95 - 4.16	ppm	Naturally present in the environment.
Removal Ratio	2012	39.4%	14% - 39.4%	% removal *	N/A

NOTE: Total organic carbon (TOC) has no health effects. The disinfectant can combine with TOC to form disinfection by-products. Disinfection is necessary to ensure that water does not have unacceptable levels of pathogens. By-products of disinfection include trihalomethanes (THMs) and haloacetic acids (HAA) which are reported elsewhere in this report.

* Removal ratio is the percent of TOC removed by the treatment process divided by the percent of TOC required by TCEQ to be removed.

Lead and Copper

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Likely Source of Contamination
Lead	2012	0	0.0013	0.015	0.015	ppm	Corrosion of customer plumbing. Action Level = .015
Copper	2012	3	1.28	1.3	1.3	ppm	By-product of drinking water disinfection. Action Level = 1.3

ADDITIONAL HEALTH INFORMATION FOR LEAD: 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. The NTMWD 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.

Unregulated Contaminants

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Chloroform	2012	17.45	9.3 - 21.8	ppb	By-product of drinking water disinfection.
Bromoform	2012	1.01	1.0 - 1.2	ppb	By-product of drinking water disinfection.
Bromodichloromethane	2012	13.07	10.1 - 16.7	ppb	By-product of drinking water disinfection.
Dibromochloromethane	2012	6.59	4.4 - 9.4	ppb	By-product of drinking water disinfection.

NOTE: Bromoform, chloroform, dichlorobromomethane, and dibromochloromethane are disinfection by-products. There is no maximum contaminant level for these chemicals at the entry point to distribution.

Secondary and Other Constituents Not Regulated
(No associated adverse health effects)

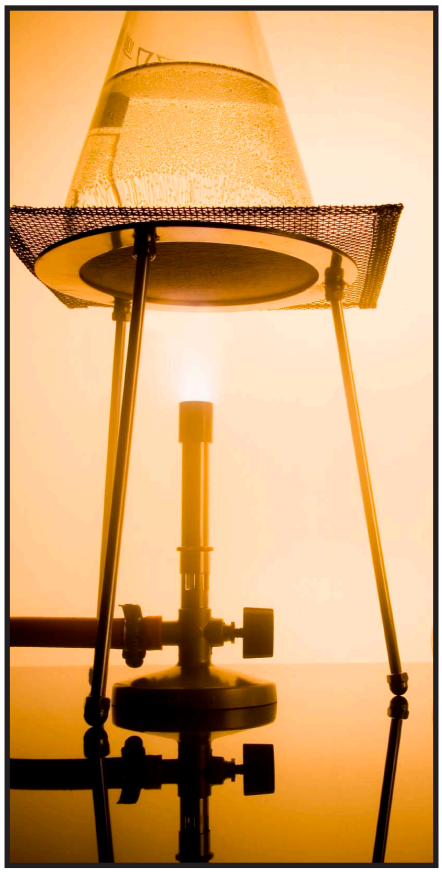
Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Bicarbonate	2011	120	73 - 120	ppm	Corrosion of carbonate rocks such as limestone.
Calcium	2012	47.5	39.9 - 47.5	ppm	Abundant naturally occurring element.
Chloride	2012	26	22.8 - 26	ppm	Abundant naturally occurring element; used in water purification; by-product of oil field activity.
Hardness as Ca/Mg	2012	133	114 - 133	ppm	Naturally occurring calcium and magnesium.
Iron	2012	Levels lower than detect level	0.00 - 0.00	ppm	Erosion of natural deposits; iron or steel water delivery equipment or facilities.
Magnesium	2012	3.54	3.5 - 3.54	ppm	Abundant naturally occurring element.
Manganese	2012	0.00125	.000525 - .00125	ppm	Abundant naturally occurring element.
Nickel	2012	0.00609	.00563 - .00609	ppm	Erosion of natural deposits.
pH	2012	8.0	7.7 - 8.0	units	Measure of corrosivity of water.
Sodium	2012	30.6	27.2 - 30.6	ppm	Erosion of natural deposits; by-product of oil field activity.
Sulfate	2012	75.7	59.9 - 75.7	ppm	Naturally occurring; common industrial by-product; by-product of oil field activity.
Total Alkalinity as CaCO3	2012	92	74 - 92	ppm	Naturally occurring soluble mineral salts.
Total Dissolved Solids	2012	264	229 - 264	ppm	Total dissolved mineral constituents in water.
Total Hardness as CaCO3	2012	133	114 - 133	ppm	Naturally occurring calcium.
Zinc	2012	0.00617	.000874 - .00617	ppm	Moderately abundant naturally occurring element used in the metal industry.

Tap water samples were collected for lead and copper analysis from sample sites throughout the community.

Cryptosporidium in Water

Cryptosporidium is a protozoan that is so small it can be seen only with a microscope. It affects the digestive tract of humans and animals. At this time there is no specific drug therapy proven to be effective, but people with healthy immune systems will usually recover within two weeks. Symptoms of infection include nausea, diarrhea and abdominal cramps. However, immono-compromised people are at greater risk of developing a life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precaution to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

North Texas Municipal Water District has tested the lake and treated water for the presence of cryptosporidium for several years and it was absent in all of the samples tested.



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Important Health Information

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 may be more vulnerable than the general public to certain microbial contaminants in drinking water. If you suffer from one of these disorders/diseases, 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 U.S. EPA's Safe Drinking Water Hotline at 800-426-4791.

Source Water Assessment

The Texas Commission on Environmental Quality (TCEQ) has completed a Source Water Susceptibility Report for all drinking water systems that own their sources. This report describes the susceptibility and types of constituents that may come into contact with the drinking water source based on human activities and natural conditions. NTMWD received the assessment report. For information on how you may obtain a copy of this report, call 972-205-3285.

Community Participation

Garland Water Utilities is part of the City government. The Garland City Council meets the first and third Tuesday of each month beginning at 7 p.m. in the City Hall Council Chamber, 200 North Fifth Street. Meetings are broadcast live on CGTV, the city government access channel on cable.

Garland City Council supports water conservation and encourages citizens to do their part in conserving this limited natural resource by using water wisely.

Conserving Water

The severe drought we experienced last year reminded us how precious water is and how much we tend to take this natural resource for granted. With less than 1% of the earth's fresh water source available, we need to learn to use water wisely. Water conservation is critical for meeting the state's long-term water needs. Here are ways to conserve water:

Inside the Home:

- Fix leaky faucets and toilets promptly to minimize water waste
- Turn off the faucet while you brush your teeth or shave
- Install a low flow showerhead, take showers instead of baths and limit your shower to 5 minutes.
- Make sure your dishwasher is full before you using it
- Use the appropriate water level or load selection on the washing machine
- Keep drinking water in the refrigerator instead of letting the faucet run until the water is cool

Outside the Home:

- Reduce lawn areas by adding SmartScape® or Xeriscaping into your landscaping
- Water the lawn during the coolest part of the day (before 10 a.m. or after 6 p.m.)
- Detect and repair all leaks in hoses and irrigation system
- Use mulch around shrubs and garden plants to reduce evaporation from the soil surface
- Do not install or use ornamental water features unless they recycle the water
- Don't water sidewalks and driveways - sweep them with a broom instead
- Use soaker hoses and drip irrigation systems to water your foundation
  If you use a soaker hose, turn it so the holes are on the bottom to avoid evaporation
- Don't scalp your lawn during hot weather

Approximately 40% of water use is contributed to landscape watering and 50% of that is wasted due to over and unnecessary watering. Remember an inch and a half of water, applied once a week, will keep most grass in Texas alive.

For more tips on how you can use less water visit our website at:

www.garlandwater.com