Richardson TEXAS

2017 WATER QUALITY REPORT

(Consumer Confidence Report)

City of Richardson Water Utilities
1260 Columbia Drive
Richardson, Texas 75081

PWS #0570015
(972) 744-4111
(972) 744-5814 (Fax)

SAFE-HIGH QUALITY-DRINKING WATER-RIGHT FROM YOUR TAP

Richardson Water Utility employees take pride in delivering safe and "superior" quality drinking water to our customers. "Superior," is the rating of our water system by the Texas Commission on Environmental Quality (TCEQ). This rating reflects the hard work and efforts of our employees to protect your health by delivering and maintaining safe and reliable drinking water.

The Water Utilities department is a municipal water distribution and wastewater collection utility owned by the City of Richardson. Wholesale treated water is purchased from the North Texas Municipal Water District (NTMWD) who has surface water rights from Lake Lavon, Lake Chapman, Lake Texoma and Lake Tawakoni.

The pumping and storage system is comprised of five pump stations, seven ground storage tanks and seven elevated storage tanks. The storage capacity is 36.25 million gallons with a pumping capacity of 98.9 million gallons per day. The water distribution system is comprised of 565 miles of water mains with 4,562 fire hydrants and 34,460 metered service connections. Each day, the city tests the water in the distribution system at various points in the city to ensure water is reaching the residents in good condition.

As water travels over the land's surface or through the ground, it dissolves naturally occurring minerals and picks up substances from animal or human activity. Contaminants that may be in untreated water include; organic chemicals from industrial or petroleum use and or radioactive materials. Good watershed management by each of us to keep contaminants out of our lakes and waterways is cheaper and easier than removing them later at the treatment plant. The NTMWD conducts daily tests on the raw water from their sources, water in process and the finished water.

ALL drinking water may contain contaminants. 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 EPA's Safe Drinking Water Hotline (1-800-426-4791).

The Public Services Department is responsible for your water distribution and infrastructure system maintenance and is part of the City government. The City Council meets on the second and fourth Monday of each month at 7:30 p.m. in the City Hall Council Chambers.

Este reporte incluye informacion importante sobre el agua para tomar. Para asistencia en español, favor de llamar al telefono (972) 744-4111

2016 Richardson Distribution Samples

Bacteriological Scheduled	1212
Bacteriological Construction	92
Bacteriological Other	122
Disinfectant Residual Scheduled	1614
Disinfectant Residual Construction	92
Disinfectant Residual Other	3636
Trihalomethanes Samples	32
Haloacetic Acids Samples	32
Nitrate/Nitrite	211
Quarterly Distribution Samples	112
Quarterly Entry Point Samples	12

Grassy, Earthy Taste and Odor

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 (972) 744-4111.

The north Texas summer climate normally consists of high temperatures and trace amounts of rainfall. The high temperatures and lack of rainfall creates an ideal environment for algae to bloom in surface water supplies.

Each summer, throughout the months of July and August, lakes and other surface water supplies experience a natural event – an "algal bloom". Algal blooms are common to surface water supplies in warm weather climate states like Texas.

As hot summer temperatures warm the reservoirs, the lack of rainfall lessens the turbidity and allows the sunlight to penetrate the water. With the increase in water temperature and the lack of turbidity, photosynthesis will occur providing the right environment for algae to reproduce or "bloom".

When an algal bloom exists, there is the possibility for a grassy, earthy taste in the treated drinking water supply. This event, although aesthetically undesirable to the public, does not alter the high quality of water provided to the cities and communities for their use.

NTMWD laboratory personnel monitor the raw water quality from Lake Lavon prior to its treatment. One of the many analyses performed is an algal count. Laboratory personnel, through this daily activity, can determine the onset of an algal bloom.

The blue green algae species Nostoc and Anabaena, as it reproduces or "blooms", produces an oily organic substance. It is this organic substance that is responsible for the change in taste and odor of the treated drinking water.

NTMWD uses several steps to control the taste and odor produced. To reduce the unpleasant taste levels, activated carbon is used as an absorption media. Potassium permanganate is added as an oxidizing agent to reduce the odor associated with an algal bloom. Both of these chemicals are removed during the treatment process prior to its delivery to the cities.

Chlorine is used throughout the treatment process as a strong disinfectant. Chlorine also aids in odor reduction during times of algal blooms.

The quality of water remains high as regulated by the Texas Commission on Environmental Quality (TCEQ) and Environmental Protection Agency (EPA) standards. The treated water remains safe for human consumption with no health risks created by the "algal blooms".

Cryptosporidium

Cryptosporidium is a microscopic parasite affecting the digestive tracts of humans and animal. It is shed in feces and when ingested, may result in diarrhea, cramps, fever and other gastrointestinal symptoms. Outbreaks have been most commonly associated with person - to - person (day care center) and waterborne (drinking and recreational water) spread of the parasite. Foodborne and animal- (especially calves) to-person spread has also been documented.

No specific drug therapy has proven to be effective, but people with healthy immune systems will usually recover within two weeks. Individuals with weak immune systems, however, may be unable to clear the parasite and suffer chronic and debilitating illness.

The NTMWD tests for Cryptosporidium in both the raw lake water and the treated water.

Special information for people with weakened immune systems –

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.

Source Water Assessment Study

The TCEQ has completed an assessment of The North Texas Municipal Water Districts source water and results indicate that some of their sources are susceptible to certain constituents. The sampling requirements for our water system are based on this susceptibility and previous sample data. Any detection of these constituents will be found in the Consumer Confidence Report. For more information on source water assessments and protection efforts in their system, contact NTMWD's public information office for an appointment.

The 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 the 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.

Contaminants 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, and wildlife;

Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

Pesticides and herbicides, which might have 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 byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems; and

Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

Water Loss

In the water loss audit submitted to the Texas Water Development Board for the time period of Jan-Dec 2016, our system reported an estimated loss of 11.15% of total purchased water. If you have any questions about the water loss audit please call (972) 744-4111.

Chloramine Exception

The City of Richardson has been granted an exception for the use of chloramines by the Texas Commission on Environmental Quality (TCEQ). A requirement of the TCEQ's exception the City of Richardson notifies its customers regarding the use of chloramines. North Texas Municipal Water District, the City of Richardson's water supplier, uses the disinfectant chloramine instead of chlorine. The change was intended to benefit our customers by reducing the levels of disinfection byproducts (DBPs) in the system, while still providing protection from waterborne disease.

However, the change to chloramines can cause problems to persons dependent on dialysis machines. A condition known as hemolytic anemia can occur if the disinfectant is not completely removed from the water that is used for the dialysate. Consequently, the pretreatment scheme used for the dialysis units must include some means, such as charcoal filter, for removing the chloramine prior to this date. Medical facilities should also determine if additional precautions are required for other medical equipment.

In addition, chloraminated water may be toxic to fish. If you have a fish tank, please make sure that the chemicals or filters that you are using are designed for use in water that has been treated with chloramines. You may also need to change the type of filter that you use for fish tanks.

Water Conservation

Every customer can help reduce water consumption in and around your home. Here are some easy ways to reduce the amount of water you use.

- Water trees and shrubs, which have deep root systems, longer and less frequently than shallow-rooted plants which require smaller amounts of water more often.
- Mow your lawn to an average of 3 inches in height. Longer grass promotes soil moisture retention reducing the need to irrigate.
- Water the lawn or garden during the coolest part of the day (early morning before 10:00 am and after 6:00 pm or later is best). Do not water on windy days.
- Adjust your watering schedule to the season. Decrease or cease watering when grass should be dormant during cooler weather months.
- Avoid overspray — Ensure that your irrigation system only sprays water on landscaped areas, not on concrete, wood, stone, brick or other impervious surfaces such as sidewalks, streets, driveways, fences or walls, which causes water runoff.
- If water runs off your lawn easily, split your watering time into shorter periods to allow for better absorption.
- Spreading a layer of organic mulch around plants retains moisture and saves water, time and money.
- Install a rain or moisture shutoff device or another technology to prevent the system from operating in the rain or when soil moisture is sufficient.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Add food wastes to a compost pile instead of using the garbage disposal and save gallons every time.
- Shorten your shower by a minute or two and you'll save up to 150 gallons per month.
- Do not let the water run while shaving or brushing teeth.
- A leaky toilet can waste 200 gallons per day. To detect leaks in the toilet, add food coloring to the tank water. If you see the same coloring in the bowl after 1 hour (without using the toilet) it is leaking.
- Install faucet aerators. You'll never notice the difference, and you'll cut your sink water consumption in half!
- Leaking faucets and toilets can waste thousands of gallons of water monthly, and they are inexpensive to fix. A few small changes in your water use habits can make a huge difference in water savings.

This is a summary of water quality for the City of Richardson drinking water. This report only lists contaminants that were detected in the water. State and Federal water quality regulations determine the frequency of testing depending on the parameter. In cases where testing is performed less than once per year the most recent sample data and year are included. For additional information, please contact the **Richardson Water Utility at 972-744–4111**

Definitions and Measurements
Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to maximum contaminant level goals 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.
(ppm) - Parts per million, or milligrams per liter(mg/L).
(ppb) - Parts per billion, or micrograms per liter
(ppt) - Parts per trillion, or nanograms per liter (ng/L)
(ppq) – Parts per quadrillion, or pictograms per liter (pg/L)
(pCi/L) - Picocuries per liter is a measure of radioactivity in water.
Treatment Technique (TT) - A required process intended to reduce the level of a contaminant in drinking water.
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.
Action Level - The concentration of a contaminant which, if exceeded, triggers a treatment or other requirement a water system must follow.
Level 1 Assessment – A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria were found.
Level 2 Assessment – A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *Escherichis coli (E. coli)* maximum contaminant level (MCL) violation has occurred and/or why total coliform bacteria were found on multiple occasions.
NTU - Nephelometric Turbidity Units (this is the unit used to measure water turbidity)
ND - Not Detected
2016 data analyses from most recent testing done in accordance with the regulations

Regulated at the Treatment Plant						
Substance / Units / Year	**Range**	**Highest Level Detected**	**MCL**	**MCLG**	**Violation**	**Possible Source**
Antimony (ppb) (2016)	0 – 0.2	Levels lower than detect level	6	6	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder; and test addition.
Arsenic (ppb) (2016)	0.0 – 0.7	0.9	10	0	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium (ppm) (2016)	0.042 – 0.061	0.061	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium (ppb) (2016)	0.52 – 1.20	1.2	100	100	No	Discharge from steel and pulp mills; erosion of natural deposits.
Fluoride (ppm)(2016)	0.13 – 0.93	0.93	4	4	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (ppm) (2016) (measured as Nitrogen)	0.05 – 0.79	0.79	10	10	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 (ppb) (2016)	1.4 – 3.4	3.4	50	50	No	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
Radioactive Contaminants						
Beta/photon emitters (pCi/L) (5/2/2016)	5.6 – 5.6	5.6	50	0	No	Decay of natural & man-made deposits
Gross alpha excluding radon and uranium (pCi/L) (5/2/2016)	0 – 0	Levels lower than detect level	15	0	No	Erosion of natural deposits.
Radium (pCi/L) (5/2/2016)	0 – 0	Levels lower than detect level	5	0	No	Erosion of natural deposits
Cryptosporidium and Giardia						
Substance / Units / Year	**Range**	**Highest Level Detected**	**Possible Source**			
Cryptosporidium (Oo) Cysts/L (2016)	0 – 0	0	Human and animal fecal waste			
Giardia (Oo) Cysts/L (2016)	0 – 0	0	Human and animal fecal waste			
NOTE: Taken on treated water samples.						
Maximum Residual Disinfectant Level						
Substance / Units / Year	**Average Level**	**Minimum Level**	**Maximum Level**	**MRDL**	**MRDLG**	**Possible Source**
Chlorine Dioxide (ppm) (2016)	0	0	0.03	0.8	0.8	Disinfectant
Chlorite (ppm) (2016)	0	0	0.115	1.0	N/A	Disinfectant
Substance / Units / Year	**Range**	**Highest Level Detected**	**MCL**	**MCLG**	**Violation**	**Possible Source**
Synthetic organic contaminants including pesticides and herbicides						

Atrazine (ppb) (2016)	0.31 – 0.61	0.61	3	3	No	Runoff from herbicide used on row crops
Di (2-ethylhexyl) phthalate (ppb) (2016)	0 – 0	Levels lower than detect level	6	0	No	Discharge from rubber and chemical factories.

Turbidity

	Limit (Treatment Technique)	Level Detected	Violation	Possible Source
Highest single measurement	1 NTU	0.78 NTU	No	Soil runoff
Lowest monthly percentage (%) meeting limit	0.3 NTU	96.2%	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.

Substance / Units / Year	Range	Highest Level Detected	Possible Source
TOC Source Water (ppm) (2016)	3.14 – 4.23	4.23	Naturally present in the environment
TOC Drinking Water (ppm) (2016)	1.37 – 2.80	2.8	Naturally present in the environment
TOC Removal Ratio (% of removal*) (2016)	25.7% - 63.9%	63.9%	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.

Secondary And Other Constituents Not Regulated

Substance / Units / Year	Range	Highest Level Detected	Possible Source
Bicarbonate (ppm) (2014)	90.9 – 92.3	92.3	Corrosion of carbonate rocks such as limestone
Calcium (ppm) (2016)	30.7 – 85.2	85.2	Abundant naturally occurring element
Chloride (ppm) (2016)	15.2 – 70.3	70.3	Abundant naturally occurring element; used in water purification; by-product of oil field activity
Hardness as Ca/Mg (ppm) (2016)	159 – 238	238	Naturally occurring calcium and magnesium
Magnesium (ppm) (2016)	5.85 – 6.65	6.65	Abundant naturally occurring element
Manganese (ppm) (2016)	0.0005 – 0.017	0.017	Abundant naturally occurring element
Nickel (ppm) (2016)	0.0025 – 0.0041	0.0041	Erosion of natural deposits
pH (units) (2016)	7.1 – 9.0	9.00	Measure of corrosivity of water
Sodium (ppm) (2016)	26.8 – 77.4	77.4	Erosion of natural deposits; by-product of oil field activity
Sulfate (ppm) (2016)	69 – 144	144	Naturally occurring; common industrial by-product; by-product of oil field activity
Total Alkalinity as CaCO3 (ppm) (2016)	60 – 117	117	Naturally occurring soluble mineral salts
Total Dissolved Solids (ppm) (2016)	194 – 556	556	Total dissolved mineral constituents in water
Total Hardness as CaCO3 (ppm) (2016)	80 – 268	268	Naturally occurring calcium
Zinc (ppm) (2016)	0.000 – 0.013	0.013	Moderately abundant naturally occurring element used in the metal industry

Disinfectants and Disinfectant By-Products

Regulated in the Distribution System

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	Possible Source
0	5% of monthly sample	1	0	0	No	Naturally present in the environment

Total coliform bacteria are used as indicators of microbial contamination of drinking water. While not disease-causing organisms themselves, they are often found in association with other microbes that are capable of causing disease. Coliform bacteria are hardier than many disease-causing organisms; therefore, their absence from water is a good indication that the water is microbiologically safe for human consumption.
Fecal Coliform REPORTED MONTHLY TESTS FOUND NO FECAL COLIFORM BACTERIA.

Substance / Units / Year	Range	Highest Level Detected	MCL	MCLG	Violation	
Total Haloacetic Acids (HAA5) (ppb) (2016)	15.2 – 28.4	23.2	60	N/A	No	By-Product of drinking water disinfection
Total Trihalomethanes (THM) (ppb) (2016)	15.9 – 38.8	31.33	80	N/A	No	By-Product of drinking water disinfection
Bromate (ppb) (2016)	0.0 – 6.0	6	10	5	No	By-Product of drinking water ozonation

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.

Maximum Residual Disinfectant Level

Substance / Units / Year	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Source of Chemical
Chlorine Residual (Chloramines) (ppm) (2016)	3.12	0.50	3.90	4.0	<4.0	Disinfectant used to control microbes Water additive used to control microbes

Unregulated Contaminants

Substance / Units / Year	Range	Highest Level Detected	Possible Source
Chloroform (ppb) (2016)	5.44 – 19.60	13.42	By-Product of drinking water disinfection
Bromoform (ppb) (2016)	1.22 – 4.40	2.98	By-Product of drinking water disinfection
Bromodichloromethane (ppb) (2016)	6.06 – 23.30	13.20	By-Product of drinking water disinfection
Dibromochloromethane (ppb) (2016)	2.98 – 14.30	7.69	By-Product of drinking water disinfection

NOTE: 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. Bromoform, chloroform, bromodichloromethane, and dibromochloromethane are disinfectant by-products. There are no maximum contaminant levels for these chemicals at the entry point to distribution.
For additional information and data visit www.epa.gov/safewater/ucmr or call the Safe Drinking Water Hotline at (800) 426-4791.

Regulated at the Customer's Tap

Substance / Units / Year	Range	90th Percentile	# of sites over action level	Action Level	Possible Source
Lead (ppb) (2016)	<0.00100 – 0.00956	0.00453	0	15	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm) (2016)	0.130 – 0.851	0.7785	0	1.3	Corrosion of household plumbing systems; Erosion of natural deposits

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 City of Richardson 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 at (800) 426-4791 or at http://www.epa.gov/safewater/lead.

Richardson City Council

Mayor	Paul Voelker
Place 1	Bob Townsend
Place 2	Mark Solomon (Mayor Pro Tem)
Place 3	Scott Dunn
Place 4	Mabel Simpson
Place 5	Marta Gomez Frey
Place 6	Steve Mitchell

The Public Services Department is responsible for your water distribution and infrastructure system maintenance and is part of the City government. The City Council meets on the second and fourth Monday of each month at 7:00 p.m. in the City Hall Council Chambers.

Important Communication Links:

Maintenance/Emergency Service (24 hours/day, 7 days/week)

(972) 744-4111

Water Utilities Administration (8:00 am – 5:00 p.m., Mon.-Fri)

(972) 744-4228

Customer Service Billing Information

(972) 744-4120

Mailing addresses:

Richardson Water Utilities
P.O. Box 830309
Richardson, Texas 75083

Web Pages:

City of Richardson – http://www.cor.net/
American Water Works Association – http://www.awwa.org/
Texas Water Utilities Association – http://www.twua.org/
TCEQ – http://www.tceq.state.tx.us/
USEPA – http://www.epa.gov/

Este reporte incluye informacion importante sobre el agua para tomar. Para asistencia en español, favor de llamar al telefono (972) 744-4111

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