THE TOWN OF NORTHLAKE
WATER QUALITY REPORT 2018

PWS ID# 0610235

THE TOWN OF NORTHLAKE PROVIDES EXCEPTIONAL WATER *to you!*

Once again we are proud to present our annual water quality report. This edition covers all testing completed from January through December 2018. We are pleased to tell you that our water meets all state and federal drinking water laws. As in the past, we are committed to delivering the best quality drinking water. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users. For more information about this report, or for any questions relating to your drinking water, please call Eric J. Tamayo, Public Works Director at 940-242-5704.

WHERE DOES OUR WATER COME FROM?

The Town's drinking water is obtained from Upper Trinity Regional Water District and the City of Fort Worth's surface water system. The City of Fort Worth obtains surface water from: Lake Worth, Richland Chambers Reservoir, Eagle Mountain Lake, Clear Fork, Trinity River, and Cedar Creek Reservoir and supplies the south portion of our Town.
The northern subdivisions are supplied by Upper Trinity Regional Water District from Lake Lewisville.

PUBLIC PARTICIPATION OPPORTUNITIES: The Town Council meets on the fourth Thursday of every month at 7:00 P.M. at Town Hall. Call 940-648-3290 if you need additional information.

En Español: Este informe incluye información importante sobre el agua potable. Si tiene preguntas o comentarios sobre éste informe en español, favor de llamar al tel. 940-242-5704.

Billions of gallons of water are wasted every day from inefficient landscape watering. The key to watering lawns is to apply water infrequently, yet thoroughly. Watering too heavily or too often can weaken your lawn, waste water, and carry soil, fertilizers, and pesticides into streams. Watering too little can also waste water because it does little to alleviate stress on grass from drought.

1. Water before 10 a.m. to save water and maintain plant health. Watering in the afternoon increases water loss due to evaporation. Watering in the evening can make your lawn and plants more prone to disease.
2. A general rule is to water up to 1 inch, once a week, as needed. Observe the grass to know when to water. At the first sign of wilting, you have 24 to 48 hours to water before damage occurs.
3. To determine when you have applied enough water, put a 6-ounce tuna can on your lawn and stop watering when it is full. If you notice runoff before the can is full, turn off the water and wait one hour before turning it on again.
4. Some plants may have lower water requirements. You may be able to reduce the sprinkler run time for areas of your yard with these plants.
5. Replace your standard irrigation clock timer with a newer, more water-efficient controller and save nearly 7,600 gallons of water annually. New technology uses local weather and landscape conditions to determine your yard's water needs.
6. Ensure sprinklers are not watering sidewalks or driveways. Also, sprinklers should spray large drops close to the ground, rather than a fog or mist, which can be blown away by wind.
7. Regularly maintain your permanent sprinkler system to make sure water is being properly applied, sprinkler heads are free from debris, water is flowing at the proper pressure, and the system does not have leaks.
8. Consider alternatives to spray irrigation when possible. Drip irrigation can minimize evaporation and runoff by 60 percent or more. This system works best with plants such as ornamentals, vines, or vegetables.

Learn more about saving water while maintaining yard health in our guide Landscape Irrigation and from Texas A&M AgriLife Extension's Earth-Kind Landscaping.

Source: Texas Commission on Environmental Quality

WHY PROVIDE A *Water Quality Report?*

TCEQ completed an assessment of your source water, and results indicate that some of our sources are susceptible to certain contaminants. The sampling requirements for your water system are based on this susceptibility and previous sample data. Any detections of these contaminants will be found in this Water Quality Report. For more information on source water assessments and protection efforts at our system, contact Eric J. Tamayo. 940-242-5704.

- *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 stormwater 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 stormwater runoff, and septic systems.
- *Radioactive contaminants,* which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

For more information about your sources of water, please refer to the Source Water Assessment Viewer available at the following URL: https://www.tceq.texas.gov/gis/swaview

Further details about sources and source-water assessments are available in Drinking Water Watch at the following URL: https://dww2.tceq.texas.gov/DWW/

DISINFECTION WITH CHLORAMINE

What is chloramination?

Chloramination is the process of adding chloramine to drinking water to disinfect it and kill germs. Chloramination is used as an alternative to chlorination. Chloramines are a group of chemical compounds that contain chlorine and ammonia. The particular type of chloramine used in drinking water disinfection is called monochloramine. Monochloramine is mixed into water in levels that kill germs but are still safe to drink.

Monochloramine is a different chemical from dichloramine and trichloramine, which are chloramines formed by other complex chemical reactions. Dichloramine and trichloramine are chloramine compounds sometimes found in and around indoor swimming pools, which cause skin, eye, and respiratory problems. These chemicals are not usually linked to drinking water.

Is chloramine treatment new?

Chloramine has been used as a drinking water disinfectant in the U.S. in places like Cleveland, Ohio, Springfield, Illinois, and Lansing, Michigan since 1929. In 1998, an EPA survey estimated 68 million Americans were drinking water disinfected with chloramine. Several major U.S. cities such as Philadelphia, San Francisco, Tampa Bay, and Washington, D.C. use chloramine to disinfect drinking water. Local cities such as Roanoke, Keller, Flower Mound and Justin use chloramines from their wholesale provider to disinfect drinking water. Chloramine is recognized as a safe disinfectant and a good alternative to chlorine .

ARE THERE ANY HEALTH ISSUES ASSOCIATED WITH CHLORAMINE?

Safe drinking water

Current studies indicate that using or drinking water with small amounts of chloramine does not cause harmful health effects and provides protection against waterborne disease outbreaks. These studies reported no observed health effects from drinking water with chloramine levels of less than 50 mg/L in drinking water. A normal level for drinking water disinfection can range from 1.0 to 4.0 mg/L.

Your health

Your water company monitors water quality regularly to provide you with safe drinking water. Some people are more sensitive than others to chemicals and changes in their environment. Individuals who have health concerns should seek medical advice from their healthcare provider before contacting their local health department.

Dialysis patients

During dialysis, large amounts of water are used to clean waste products out of a patient's blood. Dialysis centers must treat the water to remove all chemical disinfectants, including chlorine and chloramine, before the water can be used for dialysis. Home dialysis users should consult the machine manufacturer for instructions on how to properly treat their water before use.

Dichloramine and Trichloramine

Skin, eye, and respiratory problems have been linked to dichloramine and trichloramine exposure in relation to indoor swimming pools and hot tubs. However, dichloramine and trichloramine are typically not an issue in treated drinking water, which uses monochloramine, because utilities carefully monitor the water quality.

UNDERSTANDING THE CHARTS: The charts shown on the following pages shows the result of Northlake's water quality analysis related to public health. Every regulated contaminant detected in the water, even in the most minute traces, is listed. The charts contains the name of each substance, the year the sample was tested, the range of detected levels, the highest level allowed by regulation (MCL), key units of measurement, the usual source of such contamination, and footnotes* explaining the findings.

TOWN OF NORTHLAKE WATER SYSTEM CONSTITUENTS DETECTED FOR 2018

REGULATED CONTAMINANTS

Contaminant	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Violation	Likely Source of Contamination
Haloacetic Acids (HAA5) (ppb)	2018	10	4 - 19.6	No goal for the total	60	N	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM) (ppb)	2018	14	6.32 - 23.1	No goal for the total	80	N	By-product of drinking water disinfection.
Inorganic Contaminants	**Collection Date**	**Highest Level Detected**	**Range of Levels Detected**	**MCLG**	**MCL**	**Violation**	
Barium (ppm)	2014	0.016	0.016 - 0.016	2	2	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Chromium (ppb)	2014	12	12 - 12	100	100	N	Discharge from steel and pulp mills; Erosion of natural deposits.
Fluoride (ppm)	2014	0.743	0.743 - 0.743	4	4.0	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate [measured as Nitrogen] (ppm)	2018	0.751	0.176 - 0.751	10	10	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Nitrite [measured as Nitrogen] (ppm)	2015	0.004	0 - 0.004	1	1	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Selenium (ppb)	2014	1.5	1.5 - 1.5	50	50	N	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.

Contaminant	Date Sampled	MCGL	Action Level (AL)	90th Percentile	# Sites Over AL	Violation	Likely Source of Contamination
Copper (ppm)	2018	1.3	1.3	0.1952	0	N	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead (ppb)	2018	0	15	1.1	0	N	Corrosion of household plumbing systems; Erosion of natural deposits.

Contaminant	Collection Date	Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest Number of Positive Samples	Fecal Coliform or E. Coli Maximum Contaminant Level	Total # of Positive E. Coli or Fecal Coliform Samples	Violation	Likely Source of Contamination
Total Coliforms	2018	0	1 Positive Monthly Sample	1	0	0	No	Naturally present in the environment.

MAXIMUM DISINFECTANT LEVEL

Disinfectant	Collection Date	Average Level	Min Level	Max Level	MRDLG & MRDL	Violation	Source
Chloramines (ppm)	2018	2.3	0.5	3.9	4	N	By-product of drinking water disinfection

In the water loss audit submitted to the Texas Water Development Board for calendar year 2015, our system lost an estimated 23.7 MG of water. The Town did not have to turn in a water loss audit for 2018. If you have questions regarding the audit please call 940-242-5704.

UNREGULATED CONTAMINANTS

Contaminant	Range of Detects	2018	MCL	MCLG	Common Sources of Substance
Bromochloroacetic Acids (ppb)	1.00 - 5.90	5.90	Not regulated	None	By-products of drinking water disinfection.
Dichloroacetic Acid (ppb)	2.00 - 12.6	12.6			
Bromodichloromethane (ppb)	2.00 - 8.45	8.45			
Chloroform (ppb)	1.66 - 9.11	9.11			
Dibromochloromethane (ppb)	1.34 - 5.58	5.58			
Dibromoacetic Acid (ppb)	0 - 2.00	2			
Monobromoacetic Acid (ppb)	0 - 1.10	1.1			
Monochloroacetic Acid (ppb)	0 - 3.40	3.4			
Trichloroacetic Acid (ppb)	0 - 2.50	2.5			
2,3-Dibromopropionic (ppb)	Acid (S) 6 - 124	124			
Bromoform (ppb)	0 - 1.42	1.42			
1,2 Dichlorobenzene-d4 (S) (ppb)	94 - 101	101			
4-Bromofluorobenzene (S) (ppb)	75.1 - 92.6	92.6			

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.

UPPER TRINITY REGIONAL WATER DISTRICT CONSTITUENTS DETECTED FOR 2018

REGULATED CONTAMINANTS

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Violation	Likely Source of Contamination
Total Haloacetic Acids (HAA5) (ppb)	2018	4.6	NA	No goal for the total	60	N	By-product of drinking water disinfection.
Total Trihalomethanes (TTHM) (ppb)	2018	16.9	NA	No goal for the total	80	N	By-product of drinking water disinfection.
INORGANIC CONTAMINANTS							
Barium (ppm)	2018	0.034	0.031 to 0.034	2	2	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Bromate (ppb)	2018	9.10	1.10 to 9.10	0	10	N	By-product of drinking water disinfection.
TOC (ppm)	2018	3.02	1.10 to 3.02	NA	TT	N	Naturally present in the environment.
Fluoride (ppm)	2018	0.240	0.161 to 0.240	4.0	4.0	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate [measured as Nitrogen] (ppm)	2018	0.523	0.065 to 0.523	10	10	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Cyanide (ppm)	2018	0.0522	ND to 0.0522	0.2	0.2	N	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories.
Turbidity (NTU)	2018	0.24	0.06 to 0.24	NA	TT	N	Soil runoff.
SYNTHETIC ORGANIC CONTAMINANTS INCLUDING PESTICIDES AND HERBICIDES							
Atrazine (ppb)	2018	0.2	ND-0.2	3	3	N	Herbicide runoff
Simazine (ppb)	2018	0.13	ND to 0.13	4	4	N	Herbicide runoff.

	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Violation	Likely Source of Contamination
Gross Beta Emitters (pCi/L)	2017	ND	ND	0	50	N	Decay of natural and man-made deposits.
Combined Radium (pCi/L)	2015	1.5	NA	0	5	N	Erosion of natural deposits.

CITY OF FORT WORTH CONSTITUENTS DETECTED FOR 2018

Contaminant	Measure	MCL	2018 Highest Single Result	Lowest monthly % of samples ≤ 0.3 NTU	MCLG	Common Sources of Substance
Turbidity	NTU	TT	99.9%	0.5	NA	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	MCL	2018 Level	Range	MCLG	Common Sources of Substance
Atrazine (ppb)	3	0.1	0.0 to 0.1	3	Erosion of natural deposits of certain minerals that are radioactive and may emit forms of radiation known as alpha radiation
Beta particles & photon emitters[1] (pCi/L)	50	5.6	4.4 to 5.6	0	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
Combined Radium (226/228) (pCi/L)	5	2.5	NA	0	Erosion of natural deposits
Uranium (ppb)	30	1.1	0 to 1.1	0	Erosion of natural deposits
Arsenic (ppb)	10	1.10	0 to 1.1	0	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2	0.07	0.05 to 0.07	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Cyanide (ppb)	200	84.3	0 to 84.3	200	Discharge from plastic and fertilizer factories; Discharge from steel and metal factories
Di (2-Ethylhexyl) phthalate (ppb)	6	1.2	0 to 1.2	0	Discharge from rubber and chemical factories
Fluoride (ppm)	4	0.61	0.17 to 0.61	4	Water additive which promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Nitrate (measured as Nitrogen) (ppm)	10	0.67	0.17 to 0.67	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrite (measured as Nitrogen) (ppm)	1	0.02	0 to 0.02	1	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Simazine (ppb)	4	0.06	0 to 0.06	4	Herbicide runoff
Bromate (ppb)	10	4.83	0 to 10.7	0	By-product of drinking water disinfection

Contaminant	High	Low	Average	MCL	MCLG	Common Sources of Substance
Total Organic Carbon	1	1	1	TT = % removal	NA	Naturally occurring

Total Organic Carbon 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

Contaminant	Range of Detects	2018 Level	MRDL	MRDLG	Common Sources of Substance
Chloral Hydrate (ppb)	0.12 to 0.34	0.34	Not regulated	NA	By-product of drinking water disinfection
Bromoform (ppb)	0 to 5.15	5.15		0	By-products of drinking water disinfection; Not regulated individually; Included in Total Trihalomethanes
Bromodichloromethane (ppb)	1.99 to 7.08	7.08		0	
Chloroform (ppb)	2.43 to 8.40	8.4		70	
Dibromochloromethane (ppb)	1.31 to 6.94	6.94		60	
Monochloroacetic Acid (ppb)	1.5 to 3.9	3.9		70	By-products of drinking water disinfection; Not regulated individually; Included in Haloacetic Acids
Dichloroacetic Acid (ppb)	3.9 to 8.5	8.50		0	
Trichloroacetic Acid (ppb)	0 to 2.2	2.2		20	
Monobromoacetic Acid (ppb)	0 to 2.3	2.3		NA	
Dibromoacetic Acid (ppb)	1 to 4.3	4.3		NA	

SECONDARY CONSTITUENTS

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

Contaminant	2018 Level
Bicarbonate (ppm)	108 to 144
Calcium (ppm)	42 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

Contaminant	2018 Level
Sodium (ppm)	14.8 to 30.3
Sulfate (ppm)	26.3 to 36.5
Total Alkalinity as $CaCO^3$ (ppm)	98.2 to 136
Total Dissolved Solids (ppm)	156 to 251
Total Hardness as $CaCO^3$ (ppm)	118 to 162
Total Hardness in Grains (grains/gallon)	7 to 9

Disinfectants: The Town of Northlake, City of Fort Worth and Upper Trinity Regional Water District use chloramines, which is a mixture of chlorine and ammonia, to disinfect the water.

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.

Some people 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, persons 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 providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791) .

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 Eric J. Tamayo. 940-242-5704.

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.

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 Town of Northlake 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 drinking 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://water.epa.gov/drink/info/lead.

TABLE DEFINITIONS

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

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

MFL: Million fibers per liter (a measure of asbestos)

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 contamination.

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.

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.

NA: Not applicable

ND: Not detected

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

ppq: parts per quadrillion, or picograms per liter (pg/L)

ppt: parts per trillion, or nanograms per liter (ng/L)

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water.

Turbidity: A measurement of the amount of particulates in water in Nephelometric Turbidity Units (NTU). Particulates in water can include bacteria, viruses and protozoans that can cause disease. Turbidity measurements are used to determine the effectiveness of the treatment processes used to removed these particulates.

µmhos/cm): the basic unit of measurement for conductivity is micromhos per centimeter