

# ANNUAL WATER QUALITY REPORT

Reporting Year 2020



**LEWISVILLE**

Deep Roots. Broad Wings. Bright Future.

## Why You Have Received This Report

This report is a summary of the quality of water that the City of Lewisville provides to our customers. The report contains information and data compiled throughout 2020 from the most recent U.S. Environmental Protection Agency (EPA) required tests. This report also includes information about what our drinking water contained, where it came from, how it was treated, and general sources of contamination. Lewisville's water system is a "Superior" rated water system, which is the highest rating of the Texas Commission on Environmental Quality.

### All Drinking Water May Contain Contaminants

In order to ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. When drinking water meets federal standards, there may not be any health-based benefits to purchasing bottled water or point of service devices. 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 at 800.426.4791.



### Special notice for the elderly, infants, cancer patients, and people with HIV/AIDS or other immune problems

Certain populations may be more vulnerable to microbial contaminants in drinking water and should seek advice from their physician or health care provider. 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 those with HIV/AIDS or other immune system disorders can be particularly at risk from infections. Since 1998, the City of Lewisville has monitored for *Cryptosporidium*, a microbial parasite that may be commonly found in surface water and may come from animal and human feces in the watershed. *Cryptosporidium* has never been detected in either untreated or treated drinking water in Lewisville. 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.

If you have questions about the quality of your water, would like information on source water protection and how you can become involved in the public participation process, please contact the Department of Public Services at 972.219.3504 or visit our website at [cityoflewisville.com](http://cityoflewisville.com).

Este informe incluye información importante acerca de su agua potable. Si usted tiene preguntas sobre la calidad de agua, o quisiera más información sobre la protección del origen del agua, y quiere usted participar en el proceso público, por favor hable al Departamento de Servicios Públicos al 972.219.3504 o vaya a [cityoflewisville.com](http://cityoflewisville.com).

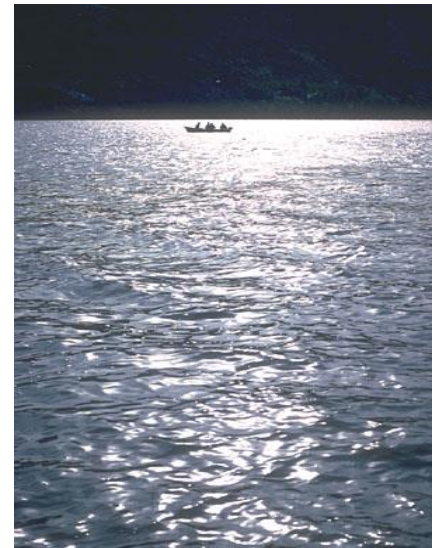
## Where Do We Get Our Water?

Our drinking water is pumped from Lewisville Lake, our surface water source, to our Water Treatment Plant for treatment prior to distribution to consumers. Treated drinking water is also purchased from Dallas Water Utilities.



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 before treatment 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 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 by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and
- Radioactive contaminants, which can be naturally occurring or 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 the Department of Public Services, Utilities Section at 972.219.3504 or visit our website at [cityoflewisville.com](http://cityoflewisville.com).

A Source Water Susceptibility Assessment for our drinking water source is currently being updated by the Texas Commission on Environmental Quality. This information describes the susceptibility and types of constituents 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. Further details about sources and source water assessments are available in Drinking Water Watch at <https://dww2.tceq.texas.gov/DWW/> or for more information about your water sources, refer to the Source Water Assessment Viewer at <https://www.tceq.texas.gov/gis/swaview>.



## Important Information for Understanding the Water Quality Table

**ACTION LEVEL:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

**MCL:** The Maximum Contaminant Level is the highest level of contaminant that is allowed in drinking water.

**MCLG:** The Maximum Contaminant Level Goal is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

**MRDL:** The Maximum Residual Disinfectant Level is the highest level of a disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants.

**MRDLG:** The Maximum Residual Disinfectant Level Goal is the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**TTHM:** Total Trihalomethanes

**THAA:** Total Haloacetic Acids

**MIN:** Minimum

**MAX:** Maximum

**AVG:** Average

**Level 1 Assessment:** A study of the water system to identify potential problems and determine, if possible, why total coliform bacteria were found.

**Level 2 Assessment:** A very detailed study of the water system to identify potential problems and determine, if possible, why an Escherichia coli (E. coli) MCL violation has occurred and/or why total coliform bacteria were found on multiple occasions.

**pCi/L:** Pico-curies per liter is a measure of radioactivity in water.

**PPB:** Parts per billion or micrograms per liter.

**PPM:** Parts per million or milligrams per liter.

### Secondary Constituents

Many constituents such as calcium, sodium, or iron which are often found in drinking water, can cause taste, color, and odor problems. The taste and odor constituents are known as Secondary Constituents because they are not causes for health concerns. Secondary Constituents are regulated by the State of Texas, not the EPA. These constituents are reported in the table to the right to provide further information on your drinking water.

Constituent	Average Level
Aluminum	0.011 ppm
Bicarbonate	87.3 ppm
Chloride	23.5 ppm
Hardness	148.0 ppm
Manganese	2.8 ppb
Sodium	22.1 ppm
Sulfate	68.7 ppm
Total Alkalinity	89.1 ppm

### Lead and Copper Reporting

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. This water supply 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 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 [epa.gov/safewater/lead](http://epa.gov/safewater/lead).

# Water Quality Table

Inorganic Contaminants									
Year	Contaminant	Unit	MCL	MCLG	Avg. Level	Min. Level	Max. Level	Major Sources	Violation
2020	Barium	ppm	2	2	0.032	0.025	0.038	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.	No
2020	Bromate*	ppb	10^	0	5.0	<1	9.0	By-product of drinking water disinfection.	No
2020	Chromium	ppm	0.1	0.1	0.0013	<0.001	0.0018	Discharge from steel and pulp mills; Erosion of natural deposits.	No
2020	Fluoride	ppm	4	4	0.51	0.20	0.67	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories.	No
2020	Nitrate	ppm	10	10	0.60	0.46	0.69	Runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits.	No
2020	Nitrite	ppm	1	1	<0.01	<0.01	<0.01	Runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits.	No
2020	Cyanide	ppb	200	200	0.091	<0.02	0.149	Discharge from plastic and fertilizer factories; discharge from steel/metal factories.	No
*Results from Dallas Water Utility's Annual Report. Not a required test for City of Lewisville. ^The MCL Bromate is the running annual average of monthly averages, computed quarterly (30 TAC 290.114(b)(5)(C)).									
Radioactive Contaminants									
2020	Beta Emitters	pCi/L*	50	0	4.0	4.0	4.0	Decay of natural and man-made deposits.	No
2020	Radon**	pCi/L	None	None	< 3	< 3	< 3	Breakdown of naturally occurring radioactive elements	No
*50 pCi/L=4 mrem/yr									
**According to the EPA, "Radon is a naturally-occurring radioactive gas that may cause cancer and may be found in drinking water and indoor air. Some people who are exposed to radon in drinking water may have increased risk of getting cancer over the course of their lifetime, especially lung cancer." Radon has never been detected in Lewisville's drinking water.									
Organic Contaminants									
2020	Atrazine	ppb	3	3	0.16	0.1	0.2	Runoff from herbicide on row crops.	No
2020	Simazine	ppb	4	4	0.09	0.06	0.17	Herbicide runoff.	No
Disinfection Byproducts									
2020	TTHM's	ppb	80	No Goal	25.5**	9.79	39	By-product of drinking water chlorination.	No
2020	THAA5's	ppb	60	No Goal	20.8**	4.1	29.4	By-product of drinking water chlorination.	No
**LRAA - Locational Running Annual Average									
Microbiological Contaminants									
Year	Contaminant	Unit	Highest Monthly % of Positive Samples		MCLG	Action Level	Major Sources	Violation	
2020	Total Coliform	Found/ Not Found	1.89%		0	≥5% of monthly samples	Naturally present in the environment.	No	
Lead and Copper									
Year	Contaminant	Unit	90 <sup>th</sup> %	MCLG	Action Level	Sites Exceeding Action Level	Major Sources	Violation	
2018	Lead	ppb	2	0	15	0	Corrosion of household plumbing systems; erosion of natural deposits	No	
2018	Copper	ppm	0.54	1.3	1.3	0	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.	No	

## Drinking Water Treatment Process

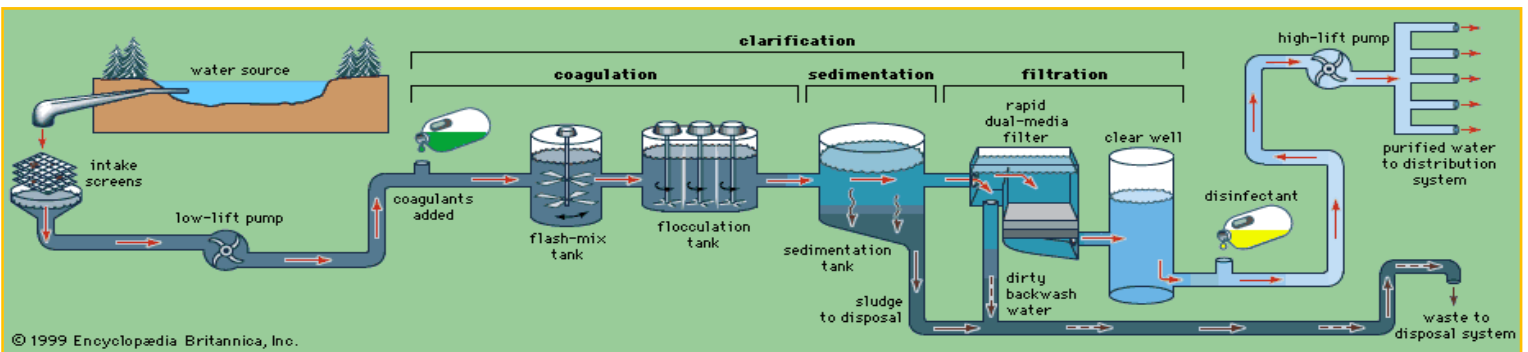
Drinking water purification is the process of removing contaminants from untreated water through a number of treatment steps to produce drinking water. Substances removed during the process may include particles of sand, minerals such as sulfur and iron, suspended particles of organic matter, microorganisms and viruses, and manmade chemical pollutants.

Untreated water is treated through a series of purification steps. As the untreated water enters the treatment plant, chemicals such as chlorine and ammonia are added to the water. Seasonally, carbon may be added to assist in the control of taste and odor.

Coagulation and flocculation are the processes which remove turbidity or color from the water with the use of chemical coagulants, ferric sulfate and polymer. Lime is added to correct the pH of the water and particles in the water begin to form a floc that settles to the bottom of the clarifier tank and is removed.



Clarified water is separated from fine sediments in the water by filters that remove any remaining suspended particles in the water. Then, treated water is disinfected and stored in water storage tanks that allow time for the chemicals to mix throughout the water.



Drinking water is pumped into the distribution system through a series of pipe networks which distribute water to customers throughout the City. Elevated storage tanks provide additional storage and supply pressure to the distribution system. The City of Lewisville's Water Production Plant is capable of producing twenty (20) million gallons of treated water daily. Both State and Federal regulations dictate the standards for drinking water quality. These standards require minimum and maximum set points for contaminants and the inclusion of control elements that ensure the production of safe drinking water.



## Treatment Requirements

Year	Contaminant	Units	MRDL	MRDLG	Avg Level	Min Level	Max Level	Major Sources	Violation
2020	Chloramines	ppm	4	4	3.02	2.74	3.22	Water additive used to control microbes	No
Year	Contaminant	Units	Action Level	Highest Single Measure	Lowest Monthly % Samples Meeting Limits			Major Sources	Violation
2020	Turbidity	NTU	0.3	0.14	100.0%			Soil runoff	No
Year	Contaminant	Units	MCL	Avg	Range			Major Sources	Violation
2020	TOC Removal	L/mg-m	≤2% Avg. SUVA	2.01	0.69 – 2.41			Total Organic Carbon is naturally present in the environment	No

**NTU: Nephelometric Turbidity Units.** Turbidity has no health effects; however, it can interfere with disinfection and provide a medium for microbial growth. Turbidity is a measurement of the cloudiness of the water caused by suspended particles. It is monitored because it is a good indicator of water quality and the effectiveness of our filtration, and 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.

**TOC: Total Organic Carbon** has no health effects; however, TOC provides a medium for the formation of disinfection by-products. These by-products include Trihalomethanes and Haloacetic acids. Drinking water containing these in excess of the ML may lead to adverse health effects, liver or kidney problems, or nervous system effects and may lead to an increased risk of cancer. The percentage of TOC removal was measured each month and the system met all TOC removal requirements set, unless a TOC violation is noted in the violations section.

L/mg-m – Liters per milligram meter

## Unregulated Contaminants

Unregulated contaminants are those for which the 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, call the Safe Drinking Water Hotline at 800.426.4791.

Year or Range	Contaminant	Avg Level	Min Level	Max Level	MCLG	Units	Source of Contamination
2020	Chloroform	11.9	4.0	22.5	70	ppb	By-product of drinking water disinfection.
2020	Bromoform	<1	<1	<1	0	ppb	By-product of drinking water disinfection.
2020	Bromodichloro-methane	5.6	3.3	11.7	0	ppb	By-product of drinking water disinfection.
2020	Dibromochloro-methane	1.8	<1	4.7	60	ppb	By-product of drinking water disinfection

## UCMR4 Unregulated Contaminants Monitoring Rule 4

The UCMR program was developed in coordination with the Contaminant Candidate List (CCL). The CCL is a list of contaminants that are not regulated by the National Primary Drinking Water Regulations, are known or anticipated to occur at public water systems and may warrant regulation under the Safe Drinking Water Act. Data collected through UCMR is stored in the National Contaminant Occurrence Database (NCOD) to support analysis and review of contaminant occurrence, to guide the CCL selection process and to support the Administrator's determination of whether to regulate a contaminant in the interest of protecting public health.

Year	Contaminant	Avg Level	Min Level	Max Level	MCL	MCLG	Units	Source of Contamination
2019	HAA5	24.27	0.35	41.79	60.00	N/A	ppb	By-product of drinking water disinfection.
2019	HAA6Br	7.34	0.00	10.25	N/A	N/A	ppb	By-product of drinking water disinfection.
2019	HAA9	30.49	0.35	48.55	N/A	N/A	ppb	By-product of drinking water disinfection.
2019	Manganese	0.84	0.40	1.90	50.00	N/A	ppb	Naturally occurring element; commercially available in combination with other elements and minerals; used in steel production, fertilizer, batteries, and fireworks; drinking water and wastewater treatment chemical; essential nutrient.

The City of Lewisville is also working to conserve and save water. Our total water loss for 2020 was 12%, or 685,068,752 gallons, based on required system evaluation conducted for calendar year 2020. The City's Conservation Plan Target of 140 Gallons per Capita Day (GPCD) was exceeded this past year with a Total GPCD of 142.



## Bacteriological Sample Collection and Analysis

The City of Lewisville collects and analyzes a minimum of 100 samples each month throughout the City's water system. The samples are collected and analyzed following the Texas Commission on Environmental Quality guidelines and methods. These samples are analyzed for total Coliform, an indicator of contamination in the drinking water, as well as many other contaminants. The City of Lewisville has not had any violations of drinking water standards.



**WATER RESTRICTIONS:**  
 .....  
**No watering between  
 10am-6pm**

**STAGE 1**  
**Water Watch**

Even # addresses (0,2,4,6,8) water  
 Tuesday & Saturday  
 .....

Odd # (1,3,5,7,9) addresses water  
 Wednesday and Sunday  
 .....

Commercial/Multi-Family water  
 Monday & Thursday  
 .....

Drip irrigation, hand  
 watering & soaker hoses  
 may water any day

**STAGE 2**  
**Water Emergency**

Even # addresses water  
 Tuesday ONLY  
 .....

Odd # addresses water Wednesday  
 ONLY  
 .....

Commercial/Multi-Family water  
 Thursday ONLY  
 .....

Foundations may be watered  
 with a soaker or handheld  
 hose on the same day as  
 landscape watering

**STAGE 3**  
**Water Crisis**  
 .....

All landscaping  
 watering is  
 prohibited

**E  
V  
E  
R  
Y**

**D  
R  
O  
P**

**C  
O  
U  
N  
T  
S**

Dispose of organic waste by composting instead of using the garbage disposal.

Roots need shade! Taller grass blades hold moisture and slows evaporation.

Optimize water usage by using high efficiency appliances and only run full loads.

Point out leaks and get them fixed quickly!

Cover your pool - it will reduce evaporation and require less filling.

Only water landscape early in the morning or after sunset to minimize evaporation.

Use a drip irrigation system for bedded plants, tree, and shrubs.

Native plants are more suited to the climate and require less water and fertilizer.

Turn off the water when brushing teeth or shaving.

SAVE WATER! By conserving, we are ensuring future generation's water quality.

For the current water restriction status visit [cityoflewsville.com](http://cityoflewsville.com)