



**Presented By**

CITY OF  
**MURPHY**

LIFE LIVED AT YOUR PACE

ANNUAL  
**WATER  
QUALITY  
REPORT**

WATER TESTING PERFORMED IN 2017



Este reporte incluye información importante sobre el agua para tomar. Para asistencia en español, favor de llamar al telefono (972) 468-4100.

PWS ID#: 0430042

## Quality First

Once again, we are pleased to present our annual water quality report. As in years past, we are committed to delivering the best-quality drinking water possible. To that end, we remain vigilant in meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education while continuing to serve the needs of all our water users. Thank you for allowing us the opportunity to serve you and your family.

We encourage you to share your thoughts with us on the information contained in this report. After all, well-informed customers are our best allies.

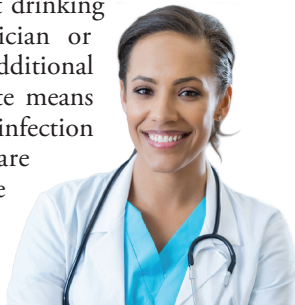
Water treatment is a complex, time-consuming process.

## Source Water Assessment

The Texas Commission on Environmental Quality (TCEQ) has completed a Source Water Susceptibility 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. The system(s) from which we purchase our water received the assessment report. For more information on source water assessments and protection efforts at our system, contact North Texas Municipal Water District at 501 East Brown Street, Wylie, Texas 75098, or call (972) 442-5405.

## 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 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.



## Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA 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 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 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 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 which may also come from gas stations, urban stormwater 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 Water Hotline at (800) 426-4791.

## Where Does My Water Come From?

The City of Murphy and 60 other North Texas communities receive drinking water from the North Texas Municipal Water District (NTMWD). More than 1.6 million citizens rely on the treated water supply provided by the NTMWD. Murphy's water is mainly from Lake Lavon. The NTMWD Water Treatment Plants are in Wylie, Texas. These treatment facilities provide billions of gallons of clean drinking water every year to their area customers, like the City of Murphy. Lavon Lake serves as the NTMWD's main raw water supply source, with the NTMWD holding water rights in the reservoir. Lavon Lake also serves as a terminal reservoir for additional supplies that are transferred to the reservoir to augment supplies from Lake Texoma, Jim Chapman Lake, Lake Bonham, and the East Fork Wetland Project. Additional supplies are available through a contract with the SRA, providing for water transfer to Lavon Lake from Lake Tawakoni and from a contract with the Greater Texoma Utility Authority for additional supplies from Lake Texoma.

## To The Last Drop

The National Oceanic and Atmospheric Administration (NOAA) defines drought as a deficiency in precipitation over an extended period of time, usually a season or more, resulting in a water shortage causing adverse impacts on vegetation, animals, and/or people. Drought strikes in virtually all climate zones, from very wet to very dry.

There are primarily three types of drought: Meteorological Drought refers to the lack of precipitation, or the degree of dryness and the duration of the dry period; Agricultural Drought refers to the agricultural impact of drought, focusing on precipitation shortages, soil water deficits, and reduced ground water or reservoir levels needed for irrigation; and Hydrological Drought, which pertains to drought that usually occurs following periods of extended precipitation shortfalls that can impact water supply (i.e., stream flow, reservoir and lake levels, ground water).

Drought is a temporary aberration from normal climatic conditions therefore, it can vary significantly from one region to another. Although normally occurring, human factors, such as water demand, can exacerbate the duration and impact that drought has on a region. By following simple water conservation measures, you can help significantly reduce the lasting effects of extended drought.

## Water Loss Audit

In the water loss audit submitted to the Texas Water Development Board during the year covered by this report, our system lost an estimated 307,910,950 gallons of water. If you have any questions about the water loss audit, please call (972) 468-4100.

## Count on Us

Delivering high-quality drinking water to our customers involves far more than just pushing water through pipes. Water treatment is a complex, time-consuming process. Because tap water is highly regulated by state and federal laws, water treatment plant and system operators must be licensed and are required to commit to long-term, on-the-job training before becoming fully qualified. Our licensed water professionals have a basic understanding of a wide range of subjects, including mathematics, biology, chemistry, and physics. Some of the tasks they complete on a regular basis include:

- Operating and maintaining equipment to purify and clarify water;
- Monitoring and inspecting machinery, meters, gauges, and operating conditions;
- Conducting tests and inspections on water and evaluating the results;
- Maintaining optimal water chemistry;
- Applying data to formulas that determine treatment requirements, flow levels, and concentration levels;
- Documenting and reporting test results and system operations to regulatory agencies; and
- Serving our community through customer support, education, and outreach.

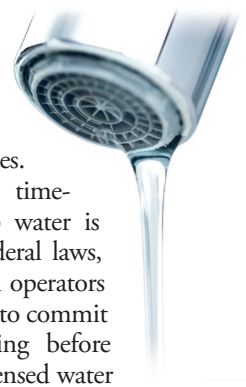
So, the next time you turn on your faucet, think of the skilled professionals who stand behind each drop.

## Community Participation

You are invited to participate in our regular public forums and voice your concerns about your drinking water. The City Council meets the first and third Tuesdays of each month, beginning at 6 p.m., at City Hall, Council Chambers, 206 North Murphy Road, Murphy, Texas.

## QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Customer Service at (972) 468-4100.



## Water Conservation Tips

You can play a role in conserving water and saving yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

## FOG (fats, oils, and grease)

You may not be aware of it, but every time you pour fat, oil, or grease (FOG) down your sink (e.g., bacon grease), you are contributing to a costly problem in the sewer collection system. FOG coats the inner walls of the plumbing in your house as well as the walls of underground piping throughout the community. Over time, these greasy materials build up and form blockages in pipes, which can lead to wastewater backing up into parks, yards, streets, and storm drains. These backups allow FOG to contaminate local waters, including drinking water. Exposure to untreated wastewater is a public health hazard. FOG discharged into septic systems and drain fields can also cause malfunctions, resulting in more frequent tank pump-outs and other expenses.

Communities spend billions of dollars every year to unplug or replace grease-blocked pipes, repair pump stations, and clean up costly and illegal wastewater spills.

Here are some tips that you and your family can follow to help maintain a well-run system now and in the future:

### NEVER:

- Pour fats, oil, or grease down the house or storm drains.
- Dispose of food scraps by flushing them.
- Use the toilet as a waste basket.

### ALWAYS:

- Scrape and collect fat, oil, and grease into a waste container such as an empty coffee can, and dispose of it with your garbage.
- Place food scraps in waste containers or garbage bags for disposal with solid wastes.
- Place a wastebasket in each bathroom for solid wastes like disposable diapers, creams and lotions, and personal hygiene products including nonbiodegradable wipes.



## Lead in Home Plumbing

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 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 [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

## Missed Monitoring

N TMWD, our wholesale provider, failed to collect the required monthly samples for bromate from the water entering the distribution system during April 2017. This monitoring is required by the Texas Commission on Environmental Quality's "Drinking Water Standards" and the federal "Safe Drinking Water Act," Public Law 95-523. Failure to monitor or monitoring inadequately makes it impossible to know if there is bromate in excess of the maximum contaminant level (MCL) requirement of 0.010 mg/L (ppm). Our water system is required to take one bromate sample once each month. Failure to collect all required bromate samples is a violation of the monitoring requirements and we are required to notify you of this violation.

## Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule. The information in the data tables shows only those substances that were detected between January 1 and December 31, 2017. Remember that detecting a substance does not necessarily mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels. The State recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

### REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Atrazine (ppb)	2017	3	3	0.2	0.2–0.2	No	Runoff from herbicide used on row crops
Barium (ppm)	2017	2	2	0.060	0.059–0.060	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beta/Photon Emitters <sup>1</sup> (pCi/L)	2017	50	0	6.2	6.2–6.2	No	Decay of natural and man-made deposits
Chloramines (ppm)	2017	[4]	[4]	3.8	2.4–3.8	No	Water additive used to control microbes
Chlorite (ppm)	2017	1	0.8	0.072	0–0.072	No	By-product of drinking water disinfection
Fluoride (ppm)	2017	4	4	0.38	0.26–0.38	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2017	60	NA	31	21.3–42.7	No	By-product of drinking water disinfection
Nitrate (ppm)	2017	10	10	0.97	0.09–0.97	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Radium (pCi/L)	2017	5	0	1.27	1.27–1.27	No	Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2017	80	NA	35	23.3–47.5	No	By-product of drinking water disinfection
Total Organic Carbon (% removal)	2017	TT	NA	47.2	22.5–47.2	No	Naturally present in the environment
Turbidity <sup>3</sup> (NTU)	2017	TT	NA	1	NA	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2017	TT = 95% of samples meet the limit	NA	99.3	NA	No	Soil runoff

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

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2017	1.3	1.3	0.63	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2017	15	0	2	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

### SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2017	300	NA	108	14–108	No	Runoff/leaching from natural deposits
Iron (ppb)	2017	300	NA	300	0–300	No	Leaching from natural deposits; Industrial wastes
Manganese (ppb)	2017	50	NA	25	1.9–25	No	Leaching from natural deposits
pH (Units)	2017	>7.0	NA	8.52	7.85–8.52	No	Naturally occurring
Sulfate (ppm)	2017	300	NA	266	47.1–266	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2017	1,000	NA	562	292–562	No	Runoff/leaching from natural deposits
Zinc (ppm)	2017	5	NA	0.020	0.0025–0.020	No	Runoff/leaching from natural deposits; Industrial wastes

### UNREGULATED AND OTHER SUBSTANCES<sup>4</sup>

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Hardness as Ca/Mg (ppm)	2017	164	159–164	Naturally occurring calcium and magnesium
Nickel (ppm)	2017	0.0071	0.0047–0.0071	Erosion of natural deposits
Sodium (ppm)	2017	123	46.1–123	Erosion of natural deposits; by-product of oil field activity

<sup>1</sup>The MCL for beta particles is 4 mrem/year. The U.S. EPA considers 50 pCi/L to be the level of concern for beta particles.

<sup>2</sup>Levels are lower than the detect level.

<sup>3</sup>Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

<sup>4</sup>Unregulated contaminants are those for which the U.S. 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.

## 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. MCLGs allow for a margin of safety.

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

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

**NA:** Not applicable

**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.

**pCi/L (picocuries per liter):** A measure of radioactivity.

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

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

**SCL (Secondary Constituent Level):** SCLs are established to regulate the aesthetics of drinking water like appearance, taste and odor.

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