

A close-up photograph of a clear glass pitcher pouring water into a matching glass. The water is captured mid-pour, creating a dynamic, crystalline stream. The background is softly blurred, showing hints of a kitchen setting with warm lighting. The overall aesthetic is clean, fresh, and emphasizes the purity of the water.

ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2015



Presented By

CITY OF _____
MURPHY

LIFE LIVED AT YOUR PACE

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

Meeting the Challenge

Once again we are proud to present our annual drinking water report, covering all drinking water testing performed between January 1 and December 31, 2015. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to your homes and businesses. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

Please remember that we are always available to assist you should you ever have any questions or concerns about your water.

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.

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 that 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 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 the 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.

What's Your Water Footprint?

You may have some understanding about your carbon footprint, but how much do you know about your water footprint? The water footprint of an individual, community, or business is defined as the total volume of freshwater that is used to produce the goods and services that are consumed by the individual or community or produced by the business. For example, 11 gallons of water are needed to irrigate and wash the fruit in one half-gallon container of orange juice. Thirty-seven gallons of water are used to grow, produce, package, and ship the beans in that morning cup of coffee. Two hundred and sixty-four gallons of water are required to produce one quart of milk, and 4,200 gallons of water are required to produce two pounds of beef.

According to the U.S. EPA, the average American uses over 180 gallons of water daily. In fact, in the developed world, one flush of a toilet uses as much water as the average person in the developing world allocates for an entire day's cooking, washing, cleaning, and drinking. The annual American per capita water footprint is about 8,000 cubic feet, twice the global per capita average. With water use increasing six-fold in the past century, our demands for freshwater are rapidly outstripping what the planet can replenish.

To check out your own water footprint, go to www.goo.gl/QMoIXT.

Water Main Flushing

Distribution mains (pipes) convey water to homes, businesses, and hydrants in your neighborhood. The water entering distribution mains is of very high quality; however, water quality can deteriorate in areas of the distribution mains over time. Water main flushing is the process of cleaning the interior of water distribution mains by sending a rapid flow of water through the mains.

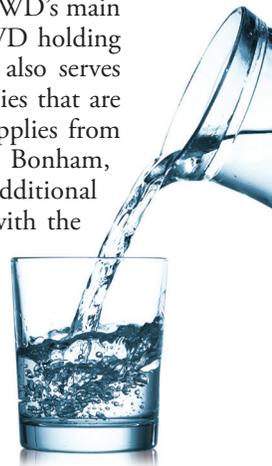
Flushing maintains water quality in several ways. For example, flushing removes sediments like iron and manganese. Although iron and manganese do not themselves pose health concerns, they can affect the taste, clarity, and color of the water. Additionally, sediments can shield microorganisms from the disinfecting power of chlorine, contributing to the growth of microorganisms within distribution mains. Flushing helps remove stale water and ensures the presence of fresh water with sufficient dissolved oxygen and disinfectant levels, and an acceptable taste and smell.

During flushing operations in your neighborhood, some short-term deterioration of water quality, though uncommon, is possible. You should avoid tap water for household uses at such times. If you do use the tap, allow your cold water to run for a few minutes at full velocity before use, and avoid using hot water, to prevent sediment accumulation in your hot water tank.

Please contact us if you have any questions or if you would like more information on our water main flushing schedule.

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 Sabine River Authority (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.



QUESTIONS?

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

What's a Cross-Connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed industrial, commercial, and institutional facilities in the service area to make sure that potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test backflow preventers to make sure that they provide maximum protection.

For more information on backflow prevention, call the Safe Drinking Water Hotline at (800) 426-4791.

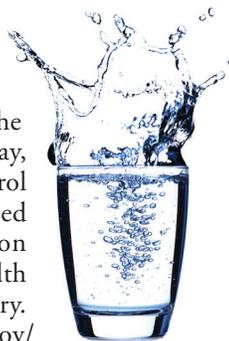
Community Water Fluoridation

The safety and benefits of fluoride are well documented. For over 70 years, U.S. citizens have benefited from drinking water containing fluoride, leading to better dental health. Drinking fluoridated water keeps the teeth strong and has reduced tooth decay by approximately 25 percent in children and adults.

Over the past several decades, there have been major improvements in oral health. Still, tooth decay remains one of the most common chronic diseases of childhood. Community water fluoridation has been identified as the most cost-effective method of delivering fluoride to all members of the community, regardless of age, educational attainment, or income level.

Nearly all water contains some fluoride, but usually not enough to help prevent tooth decay or cavities. Public water systems can add the right amount of fluoride to the local drinking water to prevent tooth decay.

Community water fluoridation is recommended by nearly all public health, medical, and dental organizations in the U.S. Because of its contribution to the dramatic decline in tooth decay, the Centers for Disease Control and Prevention (CDC) named community water fluoridation one of the greatest public health achievements of the 20th century. (Courtesy of CDC: cdc.gov/fluoridation)



Naturally Occurring Bacteria

The simple fact is, bacteria and other microorganisms inhabit our world. They can be found all around us: in our food, on our skin, in our bodies, and in the air, soil, and water. Some are harmful to us and some are not. Coliform bacteria are common in the environment and are generally not harmful themselves. The presence of this bacterial form in drinking water is a concern, however, because it indicates that the water may be contaminated with other organisms that can cause disease. Throughout the year, we tested many water samples for coliform bacteria. In that time, none of the samples came back positive for the bacteria.

Federal regulations require that public water that tests positive for coliform bacteria must be further analyzed for fecal coliform bacteria. Fecal coliform are present only in human and animal waste. Because these bacteria can cause illness, it is unacceptable for fecal coliform to be present in water at any concentration. Our tests indicate no fecal coliform is present in our water.

Information on the Internet

The U.S. EPA (www.epa.gov/Your-Drinking-Water) and the Centers for Disease Control and Prevention (www.cdc.gov/healthywater/drinking/) Web sites provide a substantial amount of information on many issues relating to water resources, water conservation, and public health. Also, TCEQ has a Web site (www.tceq.texas.gov/agency/water_main.html) that provides complete and current information on water issues in Texas, including valuable information about our watershed.

About Our Violations

During the first quarter of 2015 (January - March), a violation of the monitoring and reporting requirements set by Texas Commission on Environmental Quality (TCEQ) in Title 30, Texas Administrative Code (30 TAC), Section 290, Subchapter F, occurred in that public water systems are required to properly disinfect water before distribution, maintain acceptable disinfection residuals within the distribution system, monitor the disinfectant residual at various locations throughout the distribution system, and report the results of that monitoring to the TCEQ on a quarterly basis.

This was an administrative clerical error in getting the report to TCEQ in a timely manner. There was no monitoring violation. The City collected samples and documented information per requirements set by TCEQ. There were NO abnormal results during this monitoring period.

A Monitoring and Reporting violation occurred during the period of January 1, 2013 - December 31, 2015. Texas Commission on Environmental Quality (TCEQ) requires Community and Non-Transient Non-Community public water systems (PWSs) to monitor for lead and copper samples in accordance with Title 30, Texas Administrative Code (30 TAC), Chapter 30, Section 290.117.

The Murphy PWS distributed a notice of violation and action items for compliance to its customers in February. Sampling will begin after June 1, 2016.

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 we 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.

Sampling Results

During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. The state requires us to monitor for certain substances less often 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
Arsenic (ppb)	2015	10	0	0.7	0.0–0.7	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2015	2	2	0.055	0.039–0.055	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chloramines (ppm)	2015	[4]	[4]	3.17	1.80–4.10	No	Water additive used to control microbes
Chlorite (ppm)	2015	1	0.8	0.33	0–0.51	No	By-product of drinking water disinfection
Fluoride (ppm)	2015	4	4	0.86	0.25–0.86	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2015	60	NA	32.5	23.3–32.5	No	By-product of drinking water disinfection
Nitrate (ppm)	2015	10	10	1.79	0.05–1.79	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2015	80	NA	45.5	32.6–45.5	No	By-product of drinking water disinfection
Turbidity ¹ (NTU)	2015	TT	NA	0.65	0.3–0.65	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	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2012	1.3	1.3	0.048	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2012	15	0	1.59	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Sulfate (ppm)	2015	250	NA	117	110–117	No	Runoff/leaching from natural deposits; Industrial wastes

UNREGULATED SUBSTANCES²

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromodichloromethane (ppb)	2015	17.4	0–17.4	By-product of drinking water disinfection
Bromoform (ppb)	2015	6.0	0–6.0	By-product of drinking water disinfection
Chloroform (ppb)	2015	23.3	0–23.3	By-product of drinking water disinfection
Dibromochloromethane (ppb)	2015	13.7	0–13.7	By-product of drinking water disinfection

¹ Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of water quality and the effectiveness of disinfectants.

² Unregulated contaminants are those for which the U.S. EPA has not established drinking water standards. The purpose of monitoring unregulated contaminants 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 that, if exceeded, triggers treatment or other requirements that 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.

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).

SMCL (Secondary Maximum Contaminant Level): SMCLs 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.