

Mark of Excellence

Essential to a thriving society is an abundant, reliable and safe water supply. Irving Water Utilities plays an integral role in meeting the ever-growing needs of the community. The city provides some of the highest quality, safest drinking water in the world to businesses and to more than 220,000 residents. Irving's water rates also are among the lowest of any major city in the area.

In 1996, Congress amended the Safe Drinking Water Act requiring community systems to provide customers with an annual report on the quality of their drinking water. The City of Irving strongly supported the legislation and is pleased to provide detailed information about the city's drinking water. Irving's drinking water meets or exceeds all standards set by the Environmental Protection Agency (EPA). Irving's water is processed by the City of Dallas and delivered to the city ready for distribution to residents.

"Water Utilities employees work around the clock to ensure the safety and reliability of the water supply, and the system that delivers it," said Water Utilities Director Todd Reck. "Water is a precious resource that everyone depends on and Irving employees are committed to meeting this vital need."



Este reporte incluye informacion importante sobre el agua para tomar. Para asistencia en espanol, favor de llamar al telefono (972) 721-2281.

The City of Irving is proud to present its 2013 Water Quality Report. Each year, the Texas Commission on Environmental Quality (TCEQ) and the City of Dallas provide water quality data from the previous year. Once all of this data is received, it is compiled into this report and made available to Irving residents and businesses by July 1. Over the years, staff has been dedicated to delivering drinking water that meets or exceeds all state and federal drinking water standards. The City of Irving strives to adopt new and better methods of delivering the best quality drinking water to its residents. As regulations and drinking water standards change, it is the city's commitment to incorporate these changes systemwide in an expeditious and cost-effective manner. In complying with legislation, this report has been developed to provide valuable information about the city's drinking water.

Continuous Work to Address Water Emergencies

Like most Texas cities, Irving must anticipate events that will impact its water supply. City officials work every day to ensure measures are in place that can accommodate customer water requirements, withstand drought conditions, address delivery system problems and preserve the city's available supply through conservation. There is even a written plan detailing the measures in place to handle these water issues called "Emergency Water Management: Drought Contingency and Water Conservation Plan."

Texas government requires that this plan be in place, that it be updated every five years and reviewed and reported on every year. In 2014, the City of Irving will update its water management plan to ensure that it addresses evolving conditions in Irving and in the metropolitan region. Irving staff is working with other area cities and water authorities to develop measures that reflect regional consistency in how drought conditions are handled and in the use of water conservation initiatives. When completed and passed by City Council, this plan will guide water utility programming to promote water conservation, reduce water loss and ensure rapid response to emergency water conditions.

The new plan will be submitted to the State of Texas in 2014. Utilities staff will advertise the changes in 2014 as well as detail the new plan in the Water Quality Report that will be available in 2015.

Stage 3 Water Restrictions May be Relaxed

Based on address, water only once per week as shown below. Do not water from 10 a.m. to 6 p.m. on any day.

Sunday	Tuesday	Wednesday	Saturday
Odd address residential	Even address commercial	Odd address commercial	Even address residential

No irrigation on Monday, Thursday and Friday.

Odd-numbered addresses ending in 1, 3, 5, 7 or 9 and even-numbered addresses ending in 0, 2, 4, 6 or 8. For erosion control or repair purposes, a variance may be sought at cityofirving.org.

Though Stage 3 is still in effect, it is possible restrictions will be relaxed to Stage 2, or twice per week irrigation. To know and adhere to restrictions, residents and businesses should check the city's website weekly. The new irrigation tool described below will help because it enables weekly emails with irrigation instructions.

The city is promoting a new tool to help determine irrigation needed to supplement rainfall. Residents and businesses often set irrigation controllers and fail to adjust for changing weather. But controllers are not able to determine when to irrigate. For that, the city has installed weather stations.

During any drought stage, the best approach is to turn the controller off. Then, register for weekly information about how long to run sprinklers at watermyyard.org and run only as needed. Simply go to the site, select the City of Irving, and click on the closest weather station. Then choose a precipitation rate using one of the following methods:

- Use the instructions shown to run a catch-can test and type in the resulting number
- Use the automated settings for the type of irrigation system at the property
- Use the rate listed on system plans by the licensed irrigator that installed it
- Use the number .75 (derived from a catch-can test on city property)

After pressing enter, the number of minutes for irrigation will be shown. At that point, a prompt will be provided to register for a weekly email with irrigation run times. Watermyyard.org was designed to ensure that users are able to water appropriately and preserve landscaping while saving water and money.



Safe Drinking Water Act

Under the Safe Drinking Water Act (SDWA), the EPA is responsible for setting national limits for hundreds of substances in drinking water and also specifies various treatments that water systems must use to remove these substances. Similarly, Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Each system continually monitors for these substances and reports directly to the EPA if they were detected in the drinking water. The EPA uses this data to ensure that consumers are receiving clean water and verifies that states are enforcing the laws that regulate drinking water.

This publication conforms to the federal regulation under SDWA requiring water utilities to provide detailed water quality information to each of their customers annually. For more information about this report, to request additional copies, or for any questions or concerns relating to drinking water, contact Environmental Compliance at (972) 721-2281 or email tmoore@cityofirving.org.

Notice for High Health Risk Groups

Certain groups may be more vulnerable than the general population to 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 of contracting infections. Those who fall under these categories should seek advice about drinking water from a 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 Expected to be in Drinking Water

The sources of drinking water (both tap 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 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 also can 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

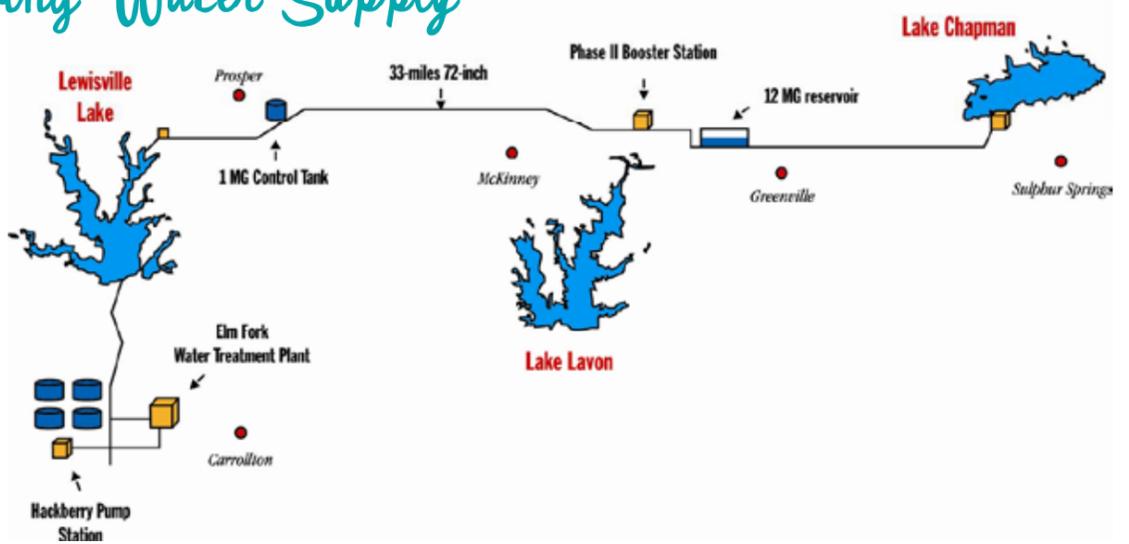
To ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Many constituents (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 called secondary constituents and are regulated by the State of Texas, not the EPA. These constituents are not causes for health concern. Therefore, secondaries are not required to be reported in this document, but may greatly affect the appearance and taste of the water.

When drinking water meets federal standards, there may not be any health benefits to purchasing bottled water. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

Where Does the City Get its Drinking Water?

Most of Irving's water travels from Lake Chapman to Lewisville Lake and is then treated by the City of Dallas. Irving owns water rights for water in Lake Chapman, which was previously known as Cooper Reservoir. Some of the City of Irving's water is purchased directly from the City of Dallas to supplement the Lake Chapman water. The City of Dallas uses surface water from the following sources: Lake Ray Hubbard, Lake Tawakoni, Lake Grapevine, Lewisville Lake and Lake Ray Roberts. The TCEQ has completed a Source Water Susceptibility Report for all drinking water systems that own their sources. This report describes the susceptibility and types of contaminants that may come into contact with the drinking water source based on human activities and natural conditions. For more information on source water assessments and protection efforts, call (972) 721-2281.

Irving Water Supply



What's in the Water?

Irving Water Utilities is pleased to report that during the past year the water delivered to Irving homes and businesses complied with, or exceeded, all state and federal drinking water requirements. The table on the next page lists the substances that were detected in the city's drinking water during 2013. Although all of the substances listed are under the Maximum Contaminant Level (MCL) set by the EPA, and therefore not expected to cause any health risks, it is important that residents know exactly what was detected and how much of the substance was present in the water.

What are coliforms?

Total coliform bacteria are used as indicators of microbial contamination of drinking water because testing for them is easy. While these organisms do not cause disease, they are often found in association with other microbes that are capable of causing disease. Coliform bacteria are more hardy than many disease-causing organisms; therefore, their absence from water is a good indication that the water is microbiologically safe for human consumption.

How to determine if there's a problem with drinking water?

If the amount of a contaminant exceeds a predetermined safe level in drinking water (MCL, Action Level, etc.), residents will be notified via newspapers, radio, television, the city's iALERT system and other means within 24 hours of receiving test results. With the notification, there will be instructions on the appropriate actions to take to prevent health risks.

Drinking Water Test Data

Irving's High Quality Water is Thoroughly Tested and Meets All Drinking Water Standards



Inorganic Contaminants

Year	Contaminant	Average Level	Minimum Level	Maximum Level	MCL	MCLG	Unit of Measure	Source of Contaminant
2013	Fluoride	0.40	0.32	0.44	4	4	ppm	Erosion of natural deposits; water additive that promotes strong teeth
2013	Nitrate (as N)	0.53	0.29	1.06	10	10	ppm	Runoff from fertilizer use; leaching from septic tanks, sewage, erosion of natural deposits
2013	Nitrite (as N)	0.017	<0.004	0.0315	1	1	ppm	Runoff from fertilizer use; leaching from septic tanks, sewage, erosion of natural deposits
2013	Manganese	2.16	<0.400	6.49	50		ppb	Naturally occurs in rocks and soil
2013	Bromate	<1.0	<1.0	<5.0	10	0	ppb	Byproduct of drinking water disinfection
2013	Barium	23.2	14.7	36.3	200	200	ppb	Discharge of drilling wastes from metal refineries; erosion of natural deposits
2013	Arsenic	1.65	1.42	2.09	10	0	ppb	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
2011	Gross Beta Particle Activity	5.3	4	7.2	50	0	pCi/L	Decay of natural and man-made deposits
2013	Aluminum	25.4	7.1	41.6	200		ppb	Naturally occurs in rocks and soil
2013	Chromium	0.643	0.521	0.707	100	100	ppb	Discharge from steel and pulp mills; erosion of natural deposits
2013	Selenium	2.86	2.20	4.08	50	50	ppb	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
2011	Combined Radium (226 & 228)	1.0	1.0	1.0	5	0	pCi/L	Erosion of natural deposits

Source: City of Dallas

Organic Contaminants

Year	Contaminant	Average Level	Minimum Level	Maximum Level	MCL	MCLG	Unit of Measure	Source of Contaminant
2013	Atrazine	<0.08	<0.08	0.18	3	3	ppb	Runoff from herbicide used on row crops
2013	Simazine	0.15	0.07	0.27	4	4	ppb	Herbicide runoff

Source: City of Dallas

Maximum Residual Disinfectant Level

Year	Disinfectant	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Unit of Measure	Source of Disinfectant
2013	Chloramine Residual	2.88	0.52	4.1	4*	4*	ppm	Disinfectant used to control microbes

*As annual average

Source: City of Irving

Disinfection Byproducts

Year	Contaminant	Average Level	Minimum Level	Maximum Level	MCL	Unit of Measure	Source of Contaminant
2013	Total Haloacetic Acids	12.7	4.20	21.4	60	ppb	Byproduct of drinking water disinfection
2013	Total Trihalomethanes	10.5	1.63	19.3	80	ppb	Byproduct of drinking water disinfection

Source: City of Irving

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. Any unregulated contaminants detected are reported in the following table. For additional information and data visit epa.gov/safewater/ucmr/ucmr2/index.html or call the Safe Drinking Water Hotline at (800) 426-4791.

Unregulated Contaminants

Year	Contaminant	Average Level	Minimum Level	Maximum Level	Unit of Measure	Source of Contaminant
2013	Chloroform	3.30	3.22	3.38	ppb	Byproduct of drinking water disinfection
2013	Bromodichloromethane	2.91	2.37	3.59	ppb	Byproduct of drinking water disinfection
2013	Dibromochloromethane	1.85	1.63	2.24	ppb	Byproduct of drinking water disinfection

Source: City of Dallas

Total Organic Carbon

Year	Contaminant	Average Level	Minimum Level	Maximum Level	MCL	Unit of Measure	Source of Contaminant
2013	Total Organic Carbon	4.27	3.55	4.99	Treated Water Alkalinity <60 mg/L as CaCO3	ppm	Naturally present in environment; no health effects

Source: City of Dallas

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 water has been sitting for several hours, you can minimize the potential for lead exposure by flushing the 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/drink/safewater/lead

Lead and Copper

Year	Contaminant	90th Percentile	No. of Sites Exceeding Action Level	Action Level	Unit of Measure	Source of Contaminant
2012	Lead	3.0	1	15	ppb	Corrosion of household plumbing systems; erosion of natural deposits
2012	Copper	0.3	0	1.3	ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

Source: City of Irving

Turbidity

Year	Contaminant	Highest Single Measurement	Lowest Monthly % of Samples Meeting Limits	Turbidity Limits	Unit of Measure	Source of Contaminant
2013	Turbidity	0.18	100%	0.3	NTU	Soil runoff

All samples met regulatory requirements.

Source: City of Dallas

Coliforms

Year	Contaminant	Highest Monthly % of Positive Samples	MCL	Unit of Measure	Source of Contaminant
2013	Total Coliform Bacteria	0.8	*	Presence	Naturally present in environment

* Presence of coliform bacteria in 5% or more of the monthly samples. Fecal coliform - Reported monthly tests found no fecal coliform bacteria.

Source: City of Irving

Table Definitions

- Action Level (AL)** - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
- Maximum Contaminant Level (MCL)** - 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.
- 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.
- Maximum Residual Disinfectant Level (MRDL)** - The highest level of 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 contamination.
- Millirem per year (mrem/year)** - Measure of radiation absorbed by the body.
- ND** - Not detected.
- Nephelometric Turbidity Units (NTU)** - Measurement of turbidity in water.
- Picocuries per liter (pCi/L)** - A measure of radioactivity.
- Point of Entry (POE)** - Point of entry.
- Treatment Technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water.
- Turbidity** - A measure of clarity of drinking water. The lower the turbidity the better.
- mfl** - million fibers per liter (a measure of asbestos)
- ppt** - parts per trillion, or nanograms per liter
- ppq** - parts per quadrillion, or picograms per liter
- ppb** - parts per billion
- ppm** - parts per million

Water Quality Flushing

Why do city workers flush water out of the fire hydrants that appear to be perfectly fine when residents and businesses are asked to conserve?

In the midst of irrigation restrictions, this question comes to the forefront when residents see a hydrant being flushed. What is important to know is that state and federal agencies require that the water in the distribution system continuously meet specific standards of quality. A minimum level of chlorine must be present in the line at all times to kill any bacteria that may try to grow. Flushing ensures public safety as it disposes of water that fails to meet this standard.

Water is flushed from the system each week through fire hydrants or flushing valves. Typically, more flushing occurs in the warmer months as higher temperatures cause chlorine to dissipate more quickly. Certain types of pipe and areas that are further away from pump stations also require more flushing. While there are limits on what can be used, the city works to preserve the usefulness of this water by collecting it in water trucks for application to landscaping at parks and for contractors to use at newly developed properties.



Learn how to fix small leaks around the house to save money by scanning this code using a QR application.

Providing safe drinking water to the community is a complex business. This report provides residents with information that is comprehensive and explained as simply as possible. For more details, call Water Utilities at (972) 721-2281. Residents can voice any concerns about their drinking water.

For inquiries about public participation and policy decisions, call (972) 721-2493.

For information about drinking water, call the EPA's Safe Drinking Water Hotline at (800) 426-4791.

Value of Tap Water

Drinking water systems are critical to public health, fire protection, economic development and quality of life. Service disruptions can endanger the public and result in significant economic loss. To provide safe and reliable drinking water to customers, city staff operates and maintains six pump stations, eight elevated tanks, 10 ground storage tanks, and approximately 700 miles of water mains. Irving has more than 100 miles of cast iron and fiber cement pipe that is at or near the end of its expected life. Due to corrosion, multiple pipe breaks and associated maintenance, new pipes are needed to replace old cast iron pipes.

High-quality water is delivered to customers' homes and businesses at less than a penny a gallon. Water rates help provide revenue to maintain high-quality water service, reduce service interruptions due to aging infrastructure and expand system capacity for future needs. Irving water customers, even with past adjustments, have some of the lowest water and sewer rates among Dallas' member cities. Revenue generated via adjustments help continue upgrades to the city's water and wastewater system.



In addition, water rates address failing infrastructure, fixed expenses and regulatory obligations.

- **Failing Infrastructure** – Pipes need to be replaced each year to avoid water loss, unhealthy sewer leaks, loss of service and fines due to not meeting regulatory standards. Line replacements are critical to maintain water quality, and to prevent outages and property damage due to line breaks and sewer backups. Replacements are expensive and costs increase over time.
- **Fixed Expenses** – Regardless of the time of year or amount of rainfall, Water Utilities must have the infrastructure to deliver an ample, high-quality supply of water for its customers. Water Utilities fixed expenses make up a majority of the budget and must be paid no matter how much water is sold.
- **Regulatory Obligations** – The TCEQ requires water utilities to meet regulatory standards by completing water study projects and paying water quality fees. TCEQ fees increase over time. In addition, existing agreements with the TCEQ require the city to replace a designated amount of infrastructure each year. The city must pay for the regulatory costs of these studies, fees and line replacements.

To decrease the financial and operational impacts placed on customers, innovative approaches to water and wastewater system maintenance are being embraced by the city. Through increased coordination between the Capital Improvements Program Team and the Water Utilities Department, a closer look is being given to the existing condition of both the water and wastewater systems, which can result in their simultaneous replacement.

A list of completed, in-progress and upcoming projects is available at cityofirving.org/cip/cip-projects.asp. For more information, contact Water Utilities at (972) 721-2281.

Water Loss

While the city works diligently to upgrade and maintain the water distribution system, line breaks and leaks result in a loss of water over time. In the water loss audit submitted to the Texas Water Development Board for the time period of January through December 2013, the City of Irving water distribution system lost an estimated 816,521,871 gallons of water. This is 6.23 percent of the water pumped during the calendar year and is well below the industry standard of 10 percent loss for effective water systems. For any questions about the water loss audit, call (972) 721-2281.

Responsible Irrigation

The City of Irving has an irrigation ordinance in place that complies with requirements established by the state. This ordinance is designed to encourage effective and responsible maintenance and use of irrigation systems. Every business and residence in Irving that has an irrigation system is required to have a rain/freeze sensor. A sensor must operate effectively and prevent activation of the system during precipitation or when temperatures drop to levels approaching the freezing point. While having a properly operating sensor is important, the city's irrigation ordinance also prohibits the wasting of water through the following:

- Allowing irrigation water to spray onto artificial surfaces such as fences and walls
- Failing to ensure system maintenance resulting in wasting of water
- Irrigating during any type of precipitation
- Irrigating with broken, misdirected or missing sprinkler parts
- Watering non-landscaped surfaces such as sidewalks and streets



City ordinances prohibit irrigation between 10 a.m. and 6 p.m. from April 1 through Oct. 31. Avoiding mid-day watering reduces the potential for evaporation. It also is best not to water during windy conditions. Water Utilities, Code Enforcement and Police personnel are all involved in patrol and enforcement. A single incident may violate multiple portions of the irrigation ordinance, and each violation may be subject to a fine of up to \$2,000. Given the importance of using water wisely and the severity of the fines, it is a good idea to monitor irrigation systems for proper operation.

When watering by hand, use positive shutoff hose nozzles or buckets. Harvesting rainwater by collection in barrels also is encouraged in order to meet watering needs. For more information, call (972) 721-2281 or visit cityofirving.org/water-utilities.