

2009 Annual Drinking Water Quality Report

Our Drinking Water Meets or Exceeds All Federal Drinking Water Requirements

This report is a summary of the quality of the water that the City of Lewisville provides our customers. The analysis was made by using the data collected throughout 2009 from the most recent U.S. Environmental Protection Agency (EPA) required tests and is presented in the attached pages. This report also includes information on what your drinking water contained, where it came from, how it was treated, and general sources of contamination.

If you have questions on 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, Utilities Section at 972/219-3504 or visit our website at www.cityoflewisville.com.

Este reporte incluye información importante acerca de su agua potable. Si usted tiene preguntas sobre la calidad del agua, ó 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 valla a www.cityoflewisville.com.

SPECIAL NOTICE

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. Since 1998, the City of Lewisville has monitored for Cryptosporidium, a microbial parasite that may be commonly found in surface water. Cryptosporidium may come from animal and human feces in the watershed. Cryptosporidium has never been detected in either the untreated or treated drinking water. Although treatment by filtration removes Cryptosporidium, it cannot guarantee 100 percent removal. The testing methods used cannot determine if the organisms are alive and capable of causing cryptosporidiosis, an abdominal infection with nausea, diarrhea and abdominal cramps that may occur after ingestion. 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.

All Drinking Water May Contain Contaminants

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 (1-800-426-4791).

Where Do We Get Our Drinking Water?

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

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. Contaminants that may be present in source water before treatment include: microbes, inorganic contaminants, pesticides, herbicides, radioactive contaminants, and organic chemical contaminants.

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 on our source water protection strategies. Some of this source water assessment information will be available later this year on Texas Drinking Water Watch at <http://dww.tceq.state.tx.us/DWW/>.

 Department of Public Services
P.O. Box 299002
Lewisville, Texas 75029-9002
972/219-3504
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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 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 they may greatly affect the appearance and taste of your water.

Important information for understanding the Water Quality Tables will be shown in yellow throughout this report.

ppb – Parts per billion or micrograms per liter.
ppm – Parts per million or milligrams per liter.

Constituent	Average Level	Constituent	Average Level
Bicarbonate	63 ppm	Total Alkalinity	63 ppm
Chloride	22 ppm	Total Dissolved Solids	198 ppm
Hardness	121 ppm	pH	8.5 units
Sodium	25 ppm	Sulfate	51 ppm



Unregulated Contaminants & Unregulated Contaminant Monitoring Rule 2 (UCMR2)

Unregulated contaminants are those for which 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. Bromoform, Chloroform, Dichlorobromomethane, and Dibromochloromethane are all disinfection byproducts. There is no maximum contaminant level for these chemicals at the entry point to distribution. The City of Lewisville has participated in gathering data under the UCMR; any unregulated contaminants detected are reported in the following table.

Year	Contaminant	Average Level	Minimum Level	Maximum Level	Unit of Measure	Source of Contaminant
2009	Chloroform	10.94	1.9	23.77	ppb	Byproduct of Drinking Water disinfection
2009	Chloromethane	1.12	0	3.31	ppb	Naturally present in the environment
2009	Bromodichloromethane	3.69	1.22	5.56	ppb	Byproduct of Drinking Water disinfection
2009	Dibromochloromethane	0.92	0	2.12	ppb	Byproduct of Drinking Water disinfection
2009	N-Nitroso-Demethylamine	0.02	0.003	0.06	ppb	Nitrosamines can form as intermediates and byproducts in chemical synthesis and manufacture of rubber, leather, and plastics; can form spontaneously by reaction of precursor amines with nitrosating agents (nitrate and related compounds), or by action of nitrate-reducing bacteria. Foods such as bacon and malt beverages can contain nitrosamines; there is also evidence that they form in the upper GI tract

For more information and data visit <http://www.epa.gov/safewater/ucmr/ucmr2/index.html>, or call the Safe Drinking Water Hotline at (800) 426-4791.

Lead/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 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://www.epa.gov/safewater/lead>.

Year	Contaminant	The 90 th Percentile	Number of Sites Exceeding Action Level	Action Level	Unit of Measure	Source of Contaminant
2009	Lead	1.2	0	15	ppb	Corrosion of household plumbing systems; erosion of natural deposits.
2009	Copper	0.698	0	1.3	ppm	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives



Unregulated Initial Distribution System Evaluation for Disinfection Byproducts

This evaluation is sampling required by EPA to determine the range of Total Trihalomethane and Haloacetic acid in the system for future regulations. The samples are not used for compliance, and may have been collected under non-standard conditions.

Year	Contaminant	Average Level	Minimum Level	Maximum Level	Unit of Measure	Source of Contaminant
2007	Total Haloacetic Acids	13.5	0	36.2	ppb	Byproduct of Drinking Water disinfection
2007	Total Trihalomethanes	17.1	8.8	33.2	ppb	Byproduct of Drinking Water disinfection



Inorganic Contaminants

Year	Contaminant	Average Level	Minimum Level	Maximum Level	MCL	MCLG	Unit of Measure	Source of Contaminant
2006	Barium	0.21	0.014	0.027	2	2	ppm	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
2009	Fluoride	0.46	0.34	0.68	4	4	ppm	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
2009	Nitrate	0.29	0.2	0.61	10	10	ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.

Radioactive Contaminants

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

2005	Gross Beta Emitters	1.95	0	5.2	50	0	pCi/L	Decay of natural and man-made deposits
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Organic Contaminants

MCL– The maximum contaminant level is the highest level of a 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. MCLGs allow for a margin of safety.

Year	Contaminant	Average Level	Minimum Level	Maximum Level	MCL	MCLG	Unit of Measure	Source of Contaminant
2009	Lindane	0.006	0	0.14	0.2	0.2	ppb	Runoff/leaching from insecticide used on cattle, lumber, gardens.
2009	Simazine	0.13	0	0.23	4	4	ppb	Herbicide runoff.
2009	Di(2-ethylhexyl)phthalate	0.93	0	7.45	6	0	ppb	Discharge from rubber and chemical factories
2009	Atrazine	0.38	0	0.7	3	3	ppb	Runoff from herbicide used on row crops.
2009	Benzo(a)pyrene (PAH)	.005	0	0.04	.2	0	ppb	Leaching from linings of water storage tanks and distribution lines.
2009	Carbon tetrachloride	0.45	0	1.8	5	0	ppb	Discharge from chemical plants and other industrial activities.

Microbiological Contaminants

Year	Contaminant	Highest monthly % of Positive Samples	Action Level	MCLG	Unit	Source of Contaminant
2009	Total Coliform	1.08	≥5%	0	sample	Naturally present in the environment

Maximum Residual Disinfectant Level

Year	Contaminant	Average Level	Minimum Level	Maximum Level	MCL	MCLG	Unit of Measure	Source of Contaminant
2009	Chloramines	2.93	2.2	3.4	4	4	ppm	Disinfectant used to control microbes.

Disinfection Byproducts

Year	Contaminant	Average Level	Minimum Level	Maximum Level	MCL	Unit of Measure	Source of Contaminant
2009	Total Haloacetic Acids	14.7	9.4	19.1	60	ppb	By-product of drinking water disinfection.
2009	Total Trihalomethanes	10.5	4.5	22.2	80	ppb	By-product of drinking water disinfection.

Treatment Requirements

SUVA – Specific Ultraviolet Absorption – an indirect indicator of whether the organic carbon in water is humic or non-humic.
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 high by-products in excess of the maximum contaminant level may lead to adverse health effects, liver or kidney problems, or nervous system effects and may lead to an increased risk of getting cancer. L/mg-m - Liters per milligram meter

Year	Contaminant	Average Level	Minimum Level	Maximum Level	MCL	Unit of Measure	Source of Contaminant
2009	Total Organic Carbon Removal	1.73	1.41	1.95	Average SUVA ≤2%	L/mg-m	Naturally present in the environment

Year	Contaminant	Highest Single Measurement	Lowest Monthly % of Samples Meeting Limits	Turbidity Limits	Unit of Measure	Source of Contaminant
2009	Turbidity	0.10	100	0.3	NTU	Soil runoff

NTU- Nephelometric turbidity units. This is the unit used to measure water turbidity. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms included bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

POSTAL CUSTOMER

Your 2009 Drinking Water Quality Report
Su 2009 Informe de la Calidad del Agua

Water Conservation



Remember To Do Your Part To Save Water!

A few changes in our daily habits can help save water and money.

- Repair all water leaks,
- Water only when needed,
- Scrape dishes clean, before washing,
- Operate dishwasher and washing machines with full loads,
- Don't let water run when washing hands, brushing teeth or shaving,
- Treat the soil with mulch or compost and plant native and adapted plantings,
- Don't cut grass too short. Keeping 2-3 inches of grass helps shade root systems,
- Water on Designated Garbage Collection Days between the hours of between 5 a.m. to 9 a.m., and 7 p.m. to 11 p.m. to minimize evaporation
- Install drip irrigation systems for bedded plants, trees and shrubs
- Don't hose paved areas, sweep instead.

The Drinking Water Treatment Process

Drinking Water Treatment or water purification is the removal of contaminants from untreated water to produce drinking water that is pure for human consumption. Substances that are removed during the process of drinking water treatment may include particulate sand; suspended particles of organic matter; microorganisms; viruses; minerals such as iron and sulfur, and man-made chemical pollutants. Water is treated through a series of purification steps. Water is pumped from Lewisville Lake to the City of Lewisville's Water Plant, where chemicals such as chlorine, and during the summer activated carbon, are added to assist in the control of taste and odor. Coagulation and Flocculation are the processes which remove any turbidity or color from the water. The water and chemical coagulants, ferric sulfate and polymer, are gently mixed to promote flocculation. Lime is also added to correct the pH of the water. The particles created begin clinging together to form larger particles called floc, in the process called flocculation. Sedimentation or settling allows the floc to settle to the bottom of the clarifier tank. The clarified water is then separated from the sediments for further treatment by Filtration. Water is filtered as the final physical treatment process by removing any remaining suspended particles and unsettled floc. Filters consisting of layers of gravel, sand and anthracite coal trap the particulates. The treated water is then disinfected with chloramines, and fluoride is added to aid in the prevention of tooth decay. The treated water flows to a water storage tank, or clearwell, which allows time for the chloramines to mix throughout the water. The water is then pumped into the distribution system through a series of pipe networks which delivers water to customers. Elevated storage tanks located throughout the City provide additional storage and supply pressure to the distribution system. The City of Lewisville's Water Production Plant is capable of producing 20 million gallons treated water each day. Both the State and Federal governments dictate the standards for drinking water quality. These standards require minimum and maximum set points for contaminants and the inclusion of control elements that produce safe drinking water.

