



City of Lubbock, Texas

2013

Water Quality Report



Strategic Water Supply Planning

How Are We Doing?

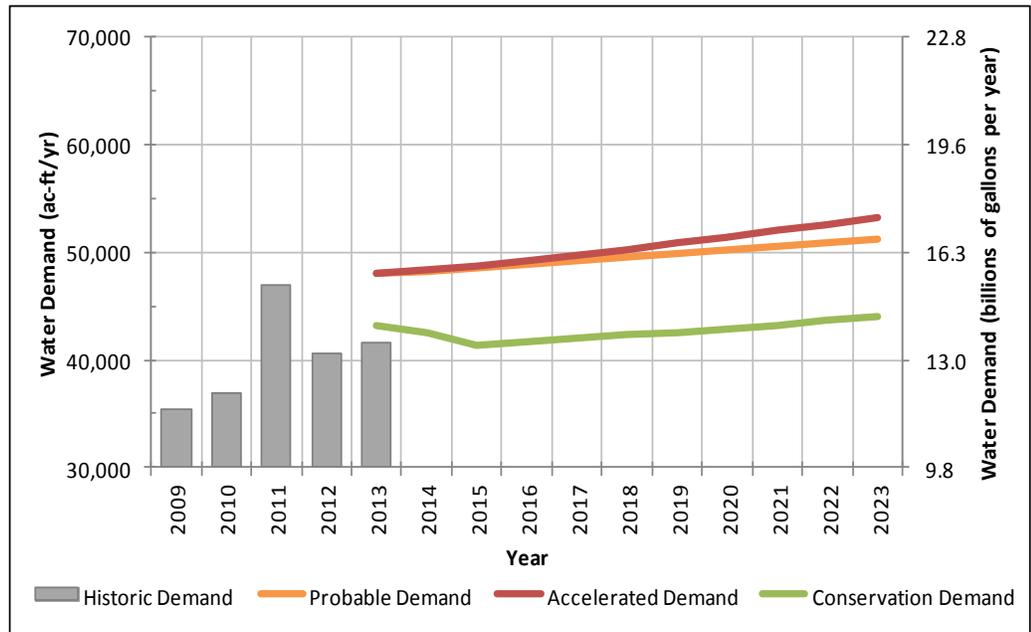
The 2013 Strategic Water Supply Plan created a “road map” for the City to use in developing and implementing water supply strategies over the next 100-year planning horizon. Even though the planning process is continuous, the City officially updates its Strategic Water Supply Plan every five years. The plan is available on-line at ...

<http://www.ci.lubbock.tx.us/departamental-websites/departments/water-department/strategic-water-supply>

The Plan estimated that we would use between 14 to 16 billion gallons of water in 2013 depending on the water demand scenario. The City actually used 13.5 billion gallons of water which is less than the estimated demand associated with more aggressive water conservation. We are making progress in stretching our water supplies and making every drop count.

What's In This Chart?

This chart depicts three possible water demand scenarios (red, orange and green lines) for Lubbock over the next ten years. The scenarios differ by population growth rate and level of water conservation. The grey bars depict our actual water demand through 2013. Notice that in 2013 we used less water than projected for conservation (green line).



How Do You Create a Sustainable Water Supply Strategy?

The key to minimizing risk is to diversify your portfolio or not place all your “eggs into one basket.” Our goal is to create a blend of several types of water supplies including groundwater, surface water, conservation and reuse water. During a drought, surface water supplies are less attractive because of low inflows which create declines in lake levels. However, groundwater supplies are considered “drought resistant.” The water does not evaporate. During wet weather, surface water supplies are desirable because they are a renewable supply of water while groundwater will not renew itself within our lifetime. Adding aggressive water conservation and water reuse to the portfolio in the future will help us spread out the risk of a water shortage and create a sustainable water supply.

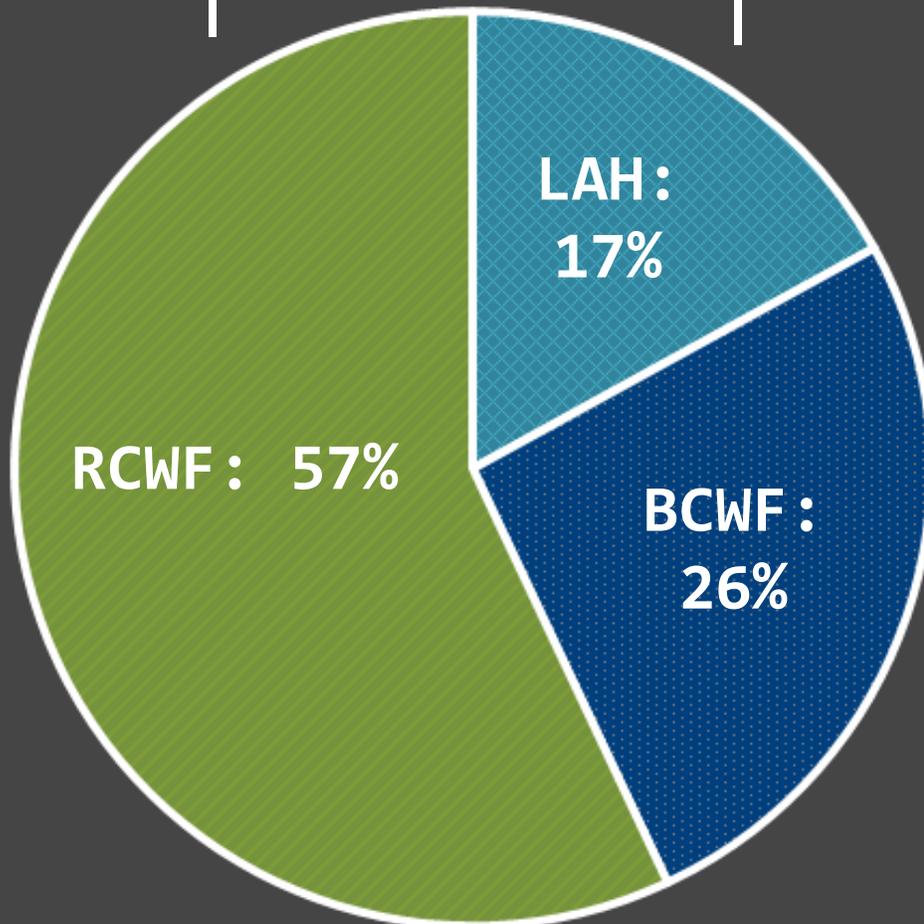
City of Lubbock's

Sources of Water Supply

Lubbock has a diversified water supply. Groundwater from the Ogallala Aquifer is supplied from the **Roberts County Well Field (RCWF)** and the **Bailey County Well Field (BCWF)**. Surface water is supplied by **Lake Alan Henry (LAH)**.

The Canadian River Municipal Water Authority (CRMWA) manages the RCWF. RCWF is located approximately 150 miles to the northeast of Lubbock. In 2013, the water customers of Lubbock used 7.77 billion gallons of water from this well field.

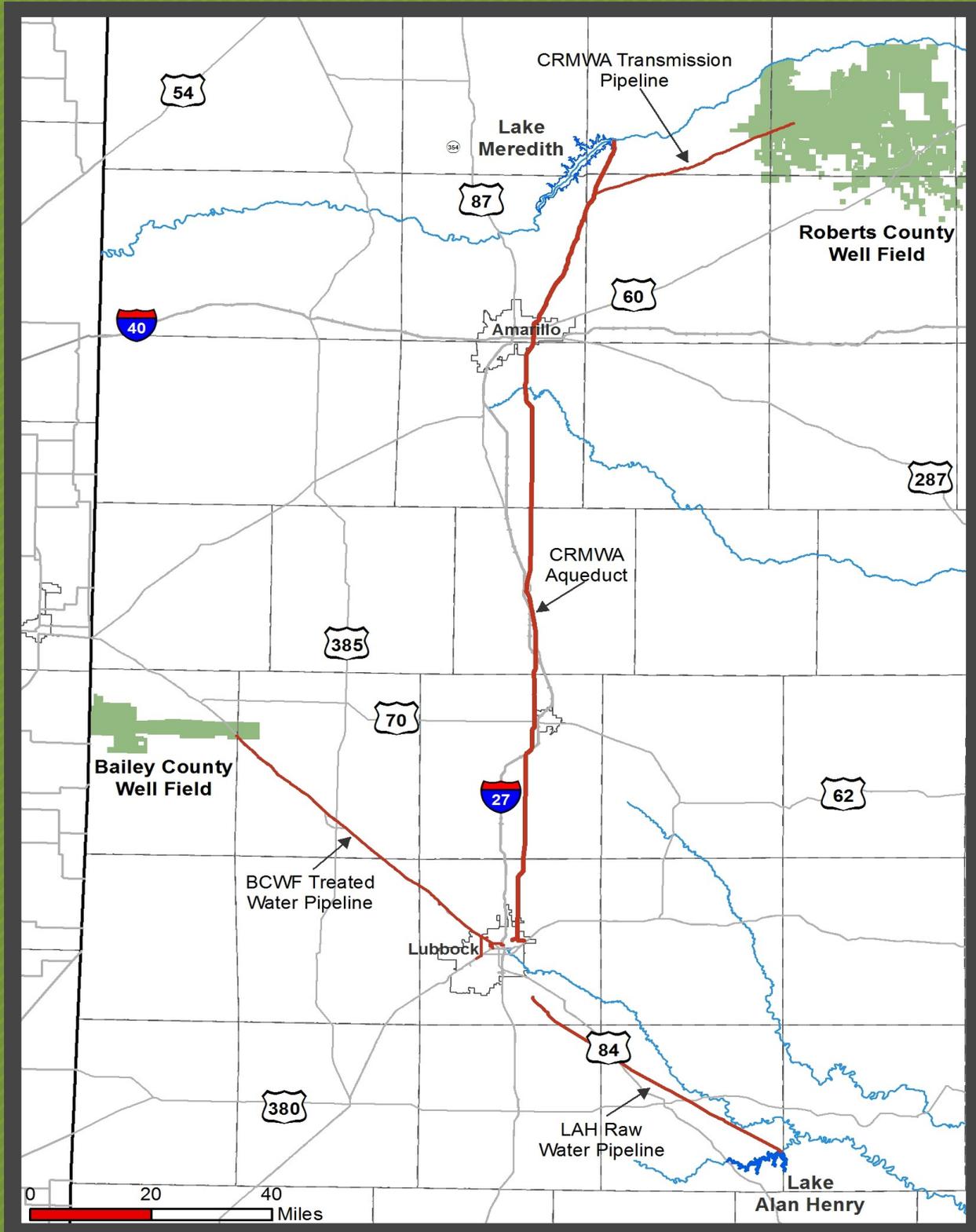
The completion of LAH in August 2012 was a significant water supply milestone. When full, the lake can hold over 30 billion gallons of water. Due to four years of severe drought, the lake is currently at approximately 60% capacity. In 2013, the water customers of Lubbock used 2.23 billion gallons of water from LAH.



The City owned BCWF has been in use since the 1950s. The City has over 80,000 acres of water rights holdings in the BCWF. Currently, there are 175 active wells, and the average well production capacity is 200 gallons per minute. In 2013, the water customers of Lubbock used 3.55 billion gallons of water from this well field.

In 2013, water customers of Lubbock used 13.54 billion gallons of

City of Lubbock's Water Supply Locations



Lubbock's closest water supply is Lake Alan Henry which is more than 50 miles.

CONSERVATION MATTERS

Water is a finite natural resource. We want to be good stewards of the water we have. In the summer, over half of the water used in Lubbock is for outdoor landscaping. Consider some of the outdoor conservation tips and determine what will work for you. By implementing these tips, you can save water and keep your yard looking beautiful!

WATER LOSS

In the water loss audit submitted to the Texas Water Development Board for the time period of Jan. - Dec. 2013, our system lost an estimated 1,264,454,000 gallons of water out of 13,324,720,000 gallons that was used. This loss is 9% of our total water use. If you have any questions about the water loss audit please call (806) 775-2616

WATER EDUCATION

The Water Education Department provides free lesson plans for teachers on water conservation, recycling, the water cycle, and natural resources. To inquire about these lesson plans or to schedule for an educator to come to your classroom or event, please call Patty Downey at (806) 775-2586.

WATER'S WORTH IT
conserve

Install
**WATERWISE
PLANTS**

in your garden. Water efficient grass, trees, bushes, ground covers and perennials can help you save water and money!

Use a 3-4 inch
LAYER OF MULCH

in your flower beds to reduce evaporation so you will not have to water as frequently. The City offers free mulch at the Caliche Canyon Landfill.

Be vigilant about
**SPRINKLER SYSTEM
MAINTAINENCE.**

Check for leaks, geysers, and misaligned spray heads. Program your automatic timer to cycle and soak to prevent runoff.



water conservation + drought restrictions



Water conservation should be practiced at all times, regardless of climatic conditions. The City's current conservation efforts include educating the public, implementing "waste of water" regulations, developing water rates that promote conservation, and irrigation inspections and consultations.

Every year from April 1 through September 30, the City implements the annual water conservation measures. These measures are outlined below.

Annual Water Conservation Measures

No watering is allowed from 10:00 a.m. to 6:00 p.m. on any day from April 1 to September 30.

Irrigation must be applied without significant runoff.

Irrigate less than 1.5 inches of water per week.

Do not irrigate during precipitation or high wind events.



The City has a Drought Contingency Plan that is implemented in times of drought or emergency. However, the City is currently choosing to proactively implement the Drought Contingency Plan as a precaution, before any undesired situations arise. We believe preserving our water supplies is the right thing to do.

The City will remain in Stage 2 of the Drought Contingency Plan until the drought conditions diminish.

Stage 2 Drought Restrictions

Landscape irrigation is allowed during one assigned day per week.

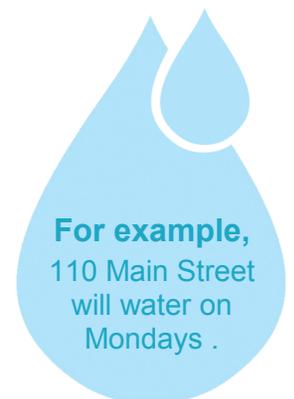
The irrigation schedule is based on the last digit of the house or business address.

- 0 or 9 - Monday
- 1 - Tuesday
- 2 - Wednesday
- 3 or 4 - Thursday
- 5 or 6 - Friday
- 7 or 8 - Saturday

Hand watering (physically holding the hose), drip systems, and soaker hoses used on landscape are allowed any day at any time.

A variance application for new landscape material is available on-line at water.ci.lubbock.tx.us/waterrestrictions.aspx.

Residents, city operations, and wholesale customers must adhere to these irrigation restrictions.



2013 WATER QUALITY DATA

THE BASICS

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.

Drinking water, including tap water and 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 1-800-426-4791.

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. Therefore, contaminants causing taste, color, or odor problems are called secondary constituents. Secondary constituents are regulated by the State of Texas, not the EPA. For more information concerning taste, odor or color of drinking water, please call the City of Lubbock's Water Department at 806-775-2588.

The City of Lubbock tests for nearly 100 different contaminants in our water system. A summary of the 2013 **water quality results** are reported in the following pages. The table below lists several terms and abbreviations that are used in the water industry and should help in understanding this report.

Term	Abbreviation	Definition
Action Level	AL	If a contaminant rises above this level, treatment is required
Maximum Contaminant Level	MCL	The highest contaminant level legally allowed
Maximum Contaminant Level Goal	MCLG	The contaminant level below which there is no known health risk
millirems per year	mrem/yr	Measure of radiation absorbed by the body
Maximum Residual Disinfectant Level	MRDL	The highest disinfectant level legally allowed
Maximum Residual Disinfectant Level Goal	MRDLG	The disinfectant level below which there is no known health risk.
Nephelometric Turbidity Units	NTU	A measure of the cloudiness of the water.
picocuries per liter	pCi/L	A measure of radioactivity
part per billion	ppb	One part per billion or micrograms per liter
part per million	ppm	One part per million or milligrams per liter
Range	<i>none</i>	The lowest and highest contaminant levels measured.
Treatment Technique	TT	A process intended to reduce the level of a contaminant in drinking water

SPECIAL INFORMATION FOR PEOPLE WITH IMMUNE SYSTEM DEFICIENCIES

Certain people may be more vulnerable than the general population to certain microbial contaminants, such as Cryptosporidium, in drinking water. Infants, some elderly or immuno-compromised 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. These individuals should seek advice about drinking water from their 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 1-800-426-4791.

2013 WATER QUALITY DATA

SUBSTANCES REGULATED AT THE TREATMENT PLANT										
Contaminant	MCL	MCLG	Roberts County Well Field		Bailey County Well Field		Lake Alan Henry		Compliant	Sources of Contamination
			Contaminant Level	Range	Contaminant Level	Range	Contaminant Level	Range		
Alpha Emitters	15 pCi/L	0	4.7 pCi/L (2011)	na	4.0 pCi/L (2011)	na	11.5 pCi/L (2013)	3.0 - 11.5 pCi/L	Yes	Erosion of natural deposits
Antimony	6 ppb	6ppb	none detected	na	none detected	na	0.273 ppb (2013)	na	Yes	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic	10 ppb**	0	1.63 ppb (2013)	na	5.9 ppb (2011)	na	3.66 ppb (2013)	na	Yes	Erosion of natural deposits; runoff from orchards
Barium	2 ppm	2 ppm	0.099 ppm (2013)	na	0.104 ppm (2011)	na	0.204 ppm (2013)	na	Yes	Erosion of natural deposits
Beta / Photon Emitters	50 pCi/L*	0	8.4 pCi/L (2011)	na	6.2 pCi/L (2011)	na	8.9 pCi/L (2013)	4.2 - 8.9 pCi/L	Yes	Decay of natural and man-made deposits
Chromium	100 ppb	100 ppb	1.77 ppb (2013)	na	none detected	na	1.60 ppb (2013)	na	Yes	Erosion of natural deposits
Cyanide	200 ppb	200 ppb	100 ppb (2011)	na	70 ppb (2011)	na	70 ppb (2013)	na	Yes	Discharge from steel / metal, plastic and fertilizer factories
Fluoride	4 ppm	4 ppm	0.714 ppm (2013)	na	1.42 ppm (2011)	na	1.21 ppm (2013)	na	Yes	Erosion of natural deposits
Nitrate	10 ppm	10 ppm	1.36 ppm (2013)	1.29 - 1.36 ppm	1.25 ppm (2013)	na	0.03 ppm (2013)	0.028 - 0.030 ppm	Yes	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion
Selenium	50 ppb	50 ppb	1.57 ppb (2013)	na	3.4 ppb (2011)	na	8.45 ppb (2013)	na	Yes	Erosion of natural deposits
Turbidity	TT = 5 NTU	0	0.17 NTU (2013)	0.04 - 0.17 NTU	na	na	0.07 NTU (2013)	0.02 - 0.07 NTU	Yes	Soil runoff. Turbidity is a measurement of the cloudiness of water. It is a good indicator of the effectiveness of the filtration system.
	TT = % of samples <0.3 NTU		100% less than 0.3 NTU				100% less than 0.3 NTU			
Uranium	30 ppb	0	na	na	na	na	11.6 ppb (2013)	na	Yes	Erosion of natural deposits

* The MCL for beta/photon emitters is 4 mrem/year. The USEPA considers 50 pCi/L to be the level of concern for beta/photon emitters.

** Running Annual Average

Please Note: The state allows us to monitor for some substances less than once per year because the concentrations of these substances do not change frequently. Therefore, some of our data, though representative, are more than one year old. The year data was collected is listed in parentheses under the contaminant level for each water source.

2013 WATER QUALITY DATA

ADDITIONAL MONITORING										
Contaminant	MCL	MCLG	Roberts County Well Field		Bailey County Well Field		Lake Alan Henry		Compliant	Sources of Contamination
			Contaminant Level	Range	Contaminant Level	Range	Contaminant Level	Range		
Aluminum	0.05-0.2ppm^	na	0.14 ppm (2013)	na	none detected (2013)	na	0.03 ppm (2013)	na	na	Water Treatment Chemical
Chloride	300 ppm ^	na	208 ppm (2013)	na	14 ppm (2011)	na	286 ppm (2013)	na	na	Naturally occurring
Total Dissolved Solids	1000 ppm^	na	666 ppm (2013)	na	317 ppm (2011)	na	813 ppm (2013)	na	na	Naturally occurring
Ammonia	Not Regulated	na	0.254 ppm (2013)	na	0.264 ppm (2013)	na	0.283 ppm (2013)	na	na	Water Treatment Chemical
Calcium	Not Regulated	na	50.3 ppm (2013)	na	52.9 ppm (2011)	na	30.0 ppm (2013)	na	na	Naturally occurring
Magnesium	Not Regulated	na	27.2 ppm (2013)	na	18.2 ppm (2011)	na	12.5 ppm (2013)	na	na	Naturally occurring
Sodium	Not Regulated	na	141 ppm (2013)	na	29.4 ppm (2011)	na	240 ppm (2013)	na	na	Naturally occurring
Iron	Not Regulated	na	none detected (2013)	na	0.023 ppm (2011)	na	none detected (2013)	na	na	Naturally occurring
Manganese	0.05 ppm^	na	none detected (2013)	na	0.0017 ppm (2011)	na	none detected (2013)	na	na	Naturally occurring
Nickel	Not Regulated	na	0.0004 ppm (2013)	na	0.0014 ppm (2011)	na	0.0005 ppm (2013)	na	na	Erosion of natural deposits
pH	Greater than 7.0^	na	8.0 (2013)	na	7.2 (2013)	na	8.3 (2013)	na	na	Naturally occurring
Zinc	5 ppm^	na	none detected (2013)	na	0.0084 ppm (2011)	na	none detected (2013)	na	na	Naturally occurring
Hardness	Not Regulated	na	238 ppm (2013)	na	207 ppm (2011)	na	126 ppm (2013)	na	na	Naturally occurring
Conductance	Not Regulated	na	1071 micromhos/cm (2013)	na	600 micromhos/cm (2011)	na	1450 micromhos/cm (2013)	na	na	Naturally occurring
Total Alkalinity	Not Regulated	na	169 ppm (2013)	na	227 ppm (2011)	na	182 ppm (2013)	na	na	Naturally occurring
Sulfate	300 ppm ^	na	81 ppm (2013)	na	37 ppm (2011)	na	134 ppm (2013)	na	na	Mineral and Nutrient

^ Highest Locational Running Annual Average

2013 WATER QUALITY DATA

REGULATED IN THE DISTRIBUTION SYSTEM						
Contaminant	Average	Range	MCL	MCLG	Compliant	Sources of Contamination
Chloramines	2.7 ppm** (2013)	1.0 - 4.0 ppm	MRDL = 4 ppm	MRDLG = 4 ppm	Yes	Disinfectant used to control microbes
Total Trihalomethanes	28.8 ppb^ (2013)	0 - 37.8 ppb	80 ppb	na	Yes	By-product of drinking water chlorination
Haloacetic Acids (5)	14.1 ppb^ (2013)	0 - 19.1 ppb	60 ppb	na	Yes	By-product of drinking water chlorination
Contaminant	Highest Monthly Percentage	Range	MCL	MCLG	Compliant	Sources of Contamination
Total Coliform	1.27% (2013)	na	Presence of coliform bacteria in 5% or more of the monthly samples	na	Yes	Naturally present in the environment
Fecal Coliform or E. Coli	0% (2013)	na		na	Yes	Human or animal fecal waste

REGULATED AT THE CUSTOMERS' TAP						
Contaminant	90th Percentile Value	Range	MCL	MCLG	Compliant	Sources of Contamination
Lead (Lead at customer tap)	2.02 ppb (2012) All sites were below the AL of 15 ppb	0 - 4.52 ppb	15 ppb AL	0 ppb	Yes	Corrosion of household plumbing systems; erosion of natural deposits
Copper	0.113 ppm (2012) All sites were below the AL of 1.3 ppm	0.012 - 0.288 ppm	1.3 ppm AL	1.3 ppm	Yes	Corrosion of household plumbing systems; erosion of natural deposits

** Running Annual Average

^ Highest Locational Running Annual Average

Homes With Lead Piping

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>.

Arsenic

While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Turbidity

Turbidity is a measure of the amount of suspended particles in water. We monitor turbidity because it is an indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.

Where to Find Additional Information about Your Water

The Texas Commission on Environmental Quality publishes a Source Water Susceptibility Assessment for drinking water sources. 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 protection strategies. This source water assessment information is available on Texas Drinking Water Watch at <http://dww.tceq.state.tx.us/DWW/>. For more information on source water assessments and protection efforts at our system, please contact us.

Water Quality Contact Information

Safe Drinking Water Hotline: 800-426-4791

City of Lubbock Water Treatment Lab: 806-775-2614
Weekdays 7:30 a.m. to 4:30 p.m.

Lubbock Water Utilities Department
General Questions: 806-775-2592
Education and Backflow Compliance: 806-775-3596

City of Lubbock Water Department
Website: <http://water.mylubbock.us>

City of Lubbock, Texas

2013

Water Quality Report