

# SUGAR LAND 2020 WATER QUALITY REPORT



## CITY OF SUGAR LAND Public Works

- Main System - PWS 0790005
- RiverPark System - PWS 0790354
- Greatwood System - PWS 0790296
- New Territory System - PWS 0790253

The City of Sugar Land Public Works Water Utilities Division takes pride in maintaining a tradition of producing superior quality water, vigilantly maintaining water and wastewater infrastructure and providing responsive and efficient customer-oriented service in a cost-effective and innovative manner, emphasizing responsible environmental stewardship and compliance with all regulatory requirements.

## TABLE OF CONTENTS

Director’s Message .....	1	Water Quality Data .....	7
Drinking Water Treatment: Chloramine and Chlorine Disinfectants.....	2	Public Water Systems Map.....	7
What is a Water Quality Report?.....	3	Definitions .....	8
Disinfecting Sugar Land’s Water .....	4	Important Information About Your Drinking Water .....	9
Possible Contaminants.....	4	Water Quality Data Tables .....	10
Lead Level Concerns.....	4	Main System.....	10
Main System Overview .....	5	RiverPark System.....	14
<i>Cryptosporidium</i> and <i>Giardia</i> .....	5	New Territory System.....	16
Production and Distribution Profile.....	5	Greatwood System.....	18
Surface Water Filtration Process.....	6	Water Loss & Water Leaks.....	20
Water System Profile.....	7	Water and Sewer Lines.....	21
		Avoiding Sanitary Sewer Back-ups .....	21

Este reporte incluye informacion importante sobre el agua para tomar.  
Para asistencia en español, favor de llamar al telefono **281-275-2450** o **311**.

# Director's Message

## A MESSAGE TO INDIVIDUALS WITH A COMPROMISED IMMUNE SYSTEM FROM THE EPA



On behalf of the City of Sugar Land's 77 water professionals, it is my pleasure to present the 2020 Water Quality Report. The water supplied by the City consistently meets all health-based drinking water criteria as well as primary and aesthetic standards and is well below any maximum contaminant level (MCL) set by the U.S. Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ). Our water quality team takes daily samples from many locations throughout each of the City's four water systems. Samples are tested for chemical, bacteriological and other possible contaminants to assure the water we deliver is safe and meets your expectations. We can report that every water quality standard was consistently met, with no regulatory violations again this year. Test results and information on drinking water quality standards are provided in this report.

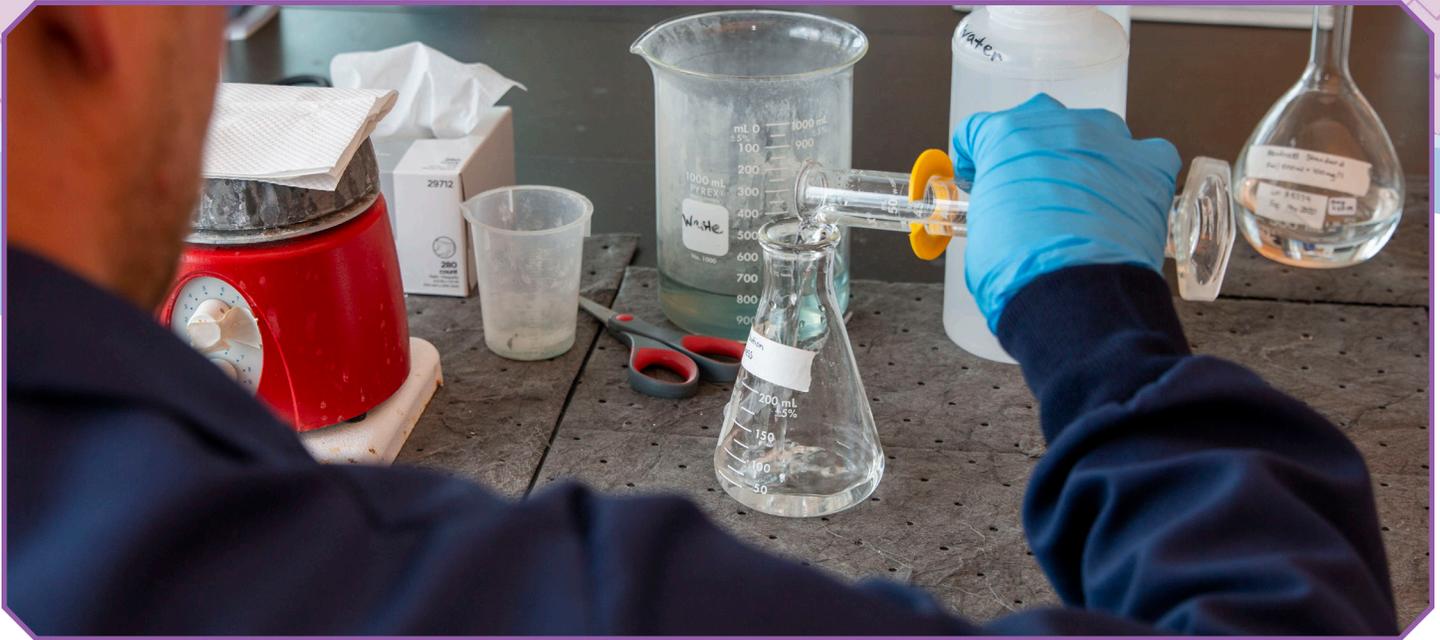
Sugar Land's team of licensed water operators and trained water professionals are committed to delivering clean, safe, drinkable water to every home and business in our community, 24-hours a day. This commitment was even more evident this year as our staff maintained daily water system operations, monitoring, and customer service levels while adhering to alternative work schedules and protocols to minimize personal exposure to the COVID-19 virus.

It is our pleasure to serve you and we value the trust and confidence you have in us as water professionals. We pledge to continue to uphold high drinking water standards, maintain and improve our water infrastructure, increase operational efficiencies, and continue to provide exceptional customer service the *Sugar Land Way*. Our team is available through the city's Customer Care Center, "311" or 281-275-2450 should you have questions or concerns about the information presented in this report or the services we provide.

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.

A handwritten signature in black ink, appearing to read "Brain Butscher".

Brain Butscher, P.E.  
Director of Public Works



## DRINKING WATER TREATMENT: CHLORAMINE AND CHLORINE DISINFECTANTS

Water Distribution systems across the country use various strategies to protect drinking water from water-borne pathogens. The vast majority of systems use either free chlorine or chloramines to help protect the water as it flows through miles of pipe for delivery to customers. As a general rule, free chlorine is used in systems supplied from ground water wells and chloramines are used in systems supplied from surface water. In Sugar Land, the Greatwood, New Territory, and RiverPark groundwater systems use free chlorine disinfection. Chloramine is used in the Main system because its source water is a mix of surface water and groundwater.

While chloramine as an excellent disinfectant, prolonged use of chloramine coupled with other factors such as high temperatures, may result in the growth and persistence of non-toxic organic matter within the pipes of the distribution system. Though harmless when consumed by humans, this organic matter can introduce unwanted taste and odor, and hinder the ability to maintain adequate disinfectant levels as water travels through many miles of pipe. Conversion to free chlorine disinfection for 30 days is a best management practice and is supported by the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ).

In early April 2021, the city converted the Main system from chloramine to chlorine disinfections. After months of planning, the management team, plant operators, and field staff worked long hours during the day and night to expedite the conversion process with minimal inconvenience to customers. During the initial 36-hour period, water lines were flushed from 422 different fire hydrants and more than 1,500 water samples taken and analyzed; results were reported to the TCEQ as required. Intense flushing, combined with extensive water quality monitoring assured Sugar Land's high standard for water quality was maintained during the conversion process. The Main system remained on chlorine disinfection for 30 days, then the process was repeated to return the system back to chloramine disinfection, once again with extensive 24-hour a day flushing and sampling to maintain water quality.

Implementing proven water treatment protocols and water quality monitoring in each of the city's four water systems enables the delivery of safe, good tasting water to your tap. Our licensed water treatment experts, trained water distribution and customer service staff, and supporting personnel continue the legacy of water professionals in their commitment to protect and preserve public health through the delivery of safe drinking water. For more information on Sugar Land's water treatment and distribution system, visit [www.SugarLandTX.gov/WQR2020](http://www.SugarLandTX.gov/WQR2020) or call Public Works at 281-275-2450 or 311.



## WHAT IS A WATER QUALITY REPORT?

A Water Quality Report, also known as a Consumer Confidence Report (CCR), is an annual report that presents the water quality of a city's drinking water. Water Quality Reports are required by the EPA and the TCEQ. The report summarizes data collected on drinking water during a calendar year. Water samples are taken daily and tested for chemical, bacteriological and disinfectant residual contaminants. The samples are taken from various locations throughout the water plant's production and distribution system. The report also documents any monitoring or testing violations of drinking water standards set by the EPA and the TCEQ.



## SUGAR LAND'S WATER SOURCES

The City of Sugar Land operates four independent potable water systems. The Main System serves the 28,332 metered connections in the city limits east of the Brazos River, and the RiverPark System serves 1,406 metered connections in the RiverPark subdivision. Greatwood and New Territory are served by their own systems with 4,630 and 4,678 connections.

The City's Main System is supplied from both groundwater and surface water. Groundwater is supplied from 14 wells at six separate groundwater plants. These wells, with an average depth of greater than 1,200 feet, pump water from the Chicot and Evangeline aquifers. Surface water from the Brazos River through the Oyster Creek canal system supplies roughly 40 percent of the Main System's water demand. Raw surface water is treated at the City's Surface Water Treatment Plant then blended with groundwater at three groundwater plants before entering the distribution lines in the Main System.

The RiverPark System's two groundwater wells pull water from the Chicot and Evangeline aquifers. The groundwater is treated at the City's RiverPark groundwater plant and then distributed to customers. Greatwood and New Territory are supplied by water from wells in the Chicot and Evangeline aquifers. Greatwood has four wells and two groundwater plants, and New Territory has three wells and three groundwater plants.

## SOURCE WATER ASSESSMENT REPORTS

The TCEQ completed an assessment of Sugar Land's source water and results indicate that some sources are susceptible to certain contaminants. The sampling requirements for the City's water systems are based on this susceptibility and previous sample data. Any detection of these contaminants may be found in this Consumer Confidence Report. Source water assessments are available through the [Source Water Assessment Viewer](#) and [Drinking Water Watch](#). Call **281-275-2450** or **311** for more information on the City's source water protection efforts.

### OPPORTUNITIES FOR PUBLIC COMMENT ON WATER PLANNING AND WATER QUALITY

For more information about this report or participating in public meetings concerning the City of Sugar Land's drinking water, call **281-275-2450** or **311**.



## DISINFECTING SUGAR LAND'S WATER

The City of Sugar Land takes every precaution to ensure Sugar Land residents have safe, clean drinking water. Disinfectants protect the water against microbial contaminants as it travels through the many miles of pipes and pumps. Chlorine is added to the RiverPark, Greatwood and New Territory Systems, and chloramine is added to the Main System.

## POSSIBLE CONTAMINANTS

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. These constituents are called secondary constituents and are regulated by the State of Texas, not the EPA. Secondary constituents are not cause for health concern, but they may affect the appearance and taste of your water. Drinking water (both tap and bottled water) comes from rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over land or through the ground, it may pick up naturally occurring minerals, substances from animals or humans and even radioactive material.

Contaminants that may be present in drinking 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 storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming;
- pesticides and herbicides, which might have a variety of sources such as agriculture, urban storm water runoff and residential uses;
- organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems; and
- radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

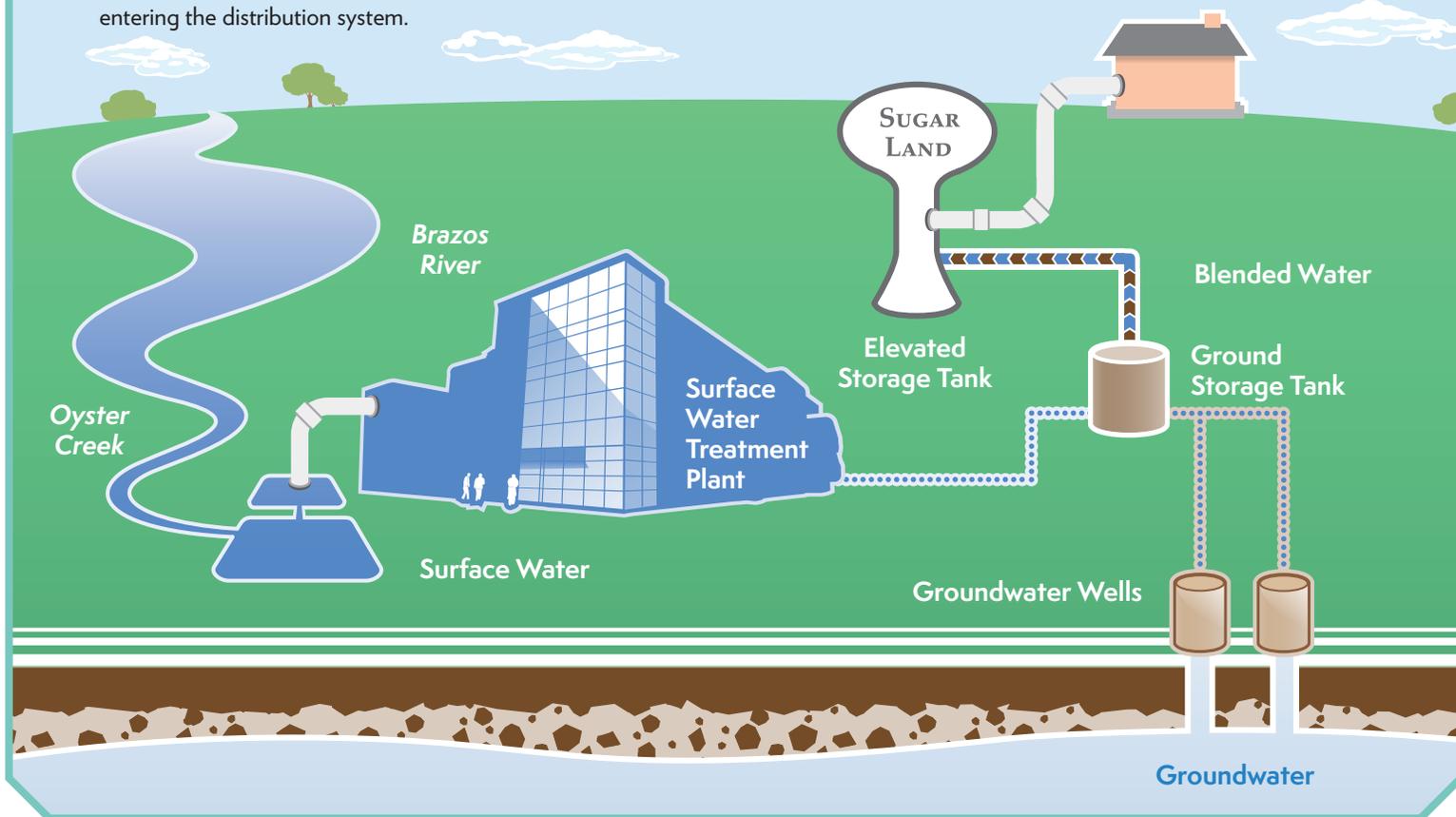
## LEAD LEVEL CONCERNS

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. The City of Sugar Land is responsible for providing high quality drinking water, but cannot control the variety of materials used in private 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 two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may want 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** at **800-426-4791** or on the [EPA's website](#).

# Main System Overview

In the Main System, treated surface water that comes from the Surface Water Treatment Plant is blended with groundwater before entering the distribution system.



## CRYPTOSPORIDIUM AND GIARDIA

*Cryptosporidium* and *Giardia* are waterborne, pathogenic organisms. They can be passed into the environment through urban runoff or a sewage leak. Exposure to these organisms can lead to symptoms such as diarrhea, abdominal discomfort, fever, weight loss, malabsorption and anemia. Although not life-threatening to healthy adults, *Cryptosporidium* and *Giardia* can be fatal to infants, the elderly, pregnant women and people with a compromised immune system. (See the message from the EPA on page 2 if you may be at risk.)

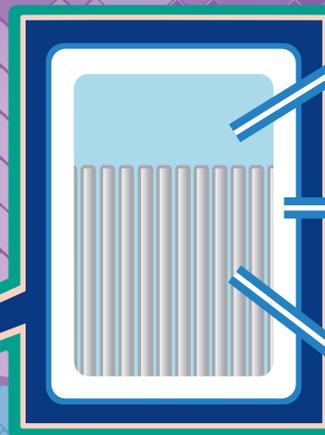
## PRODUCTION AND DISTRIBUTION PROFILE

Two sources supply the City's Main System: surface water from Oyster Creek and the Brazos River treated at the City's Surface Water Treatment Plant and groundwater wells. The RiverPark, Greatwood and New Territory systems retrieve water from groundwater wells and treat it in one of the City's groundwater plants. Even though Sugar Land's water is excellent quality, chlorine is added to the RiverPark, Greatwood and New Territory systems, and chloramine is added to the Main System to protect the finished water against microbial contaminants as it travels through the many miles of pipes and pumps before being delivered to customers. Fluoride is added to the Main and RiverPark systems to help prevent tooth decay. Corrosion inhibitors may also be added to reduce corrosion of metal components in the private plumbing systems in homes and buildings.

After the water has been treated to meet federal and state standards, the water is delivered to homes and businesses. The City of Sugar Land is committed to providing high quality water. If you have any questions regarding the data in this report, contact the **Public Works Department** at **281-275-2450** or **311**.

# Surface Water Filtration Process

WATER FLOW

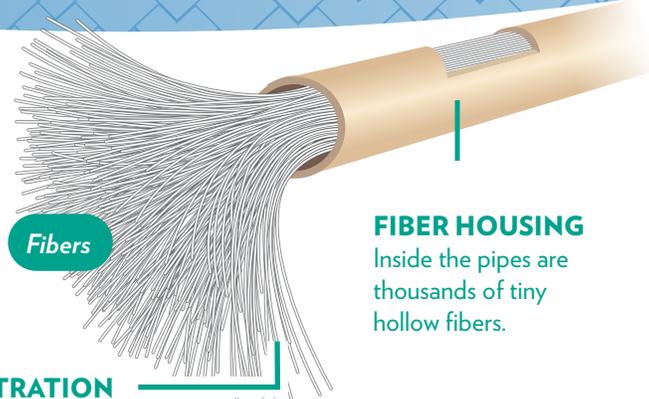
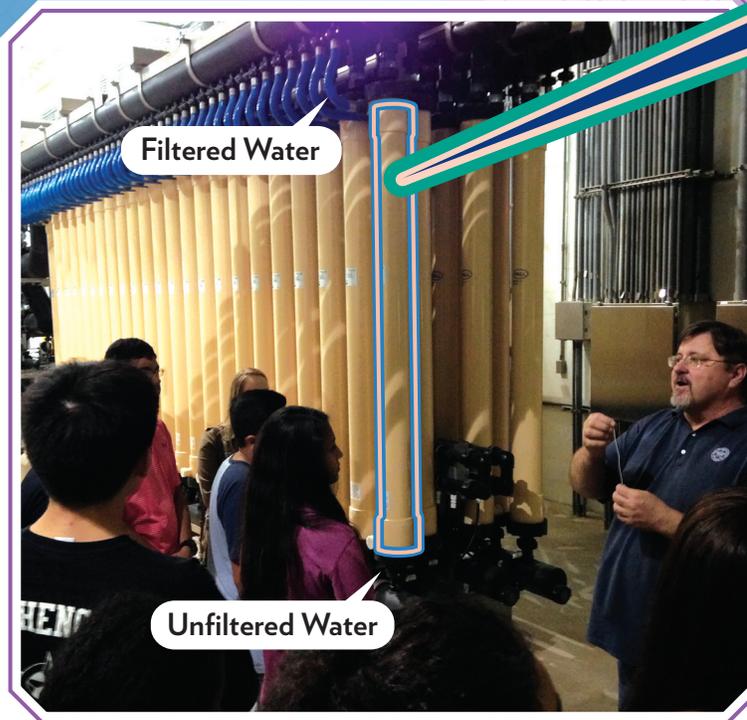


Filtered Water

Membrane Wall

Water passes through the fibers, and contaminants are filtered out.

Unfiltered Water



Fibers

**FIBER HOUSING**

Inside the pipes are thousands of tiny hollow fibers.

**FILTRATION**

The hollow fibers absorb water, but particles that are larger than 0.1 micron cannot pass through the pores. Bacteria, parasites, sand, silt, clay and other contaminants that are too big to pass through are filtered out.

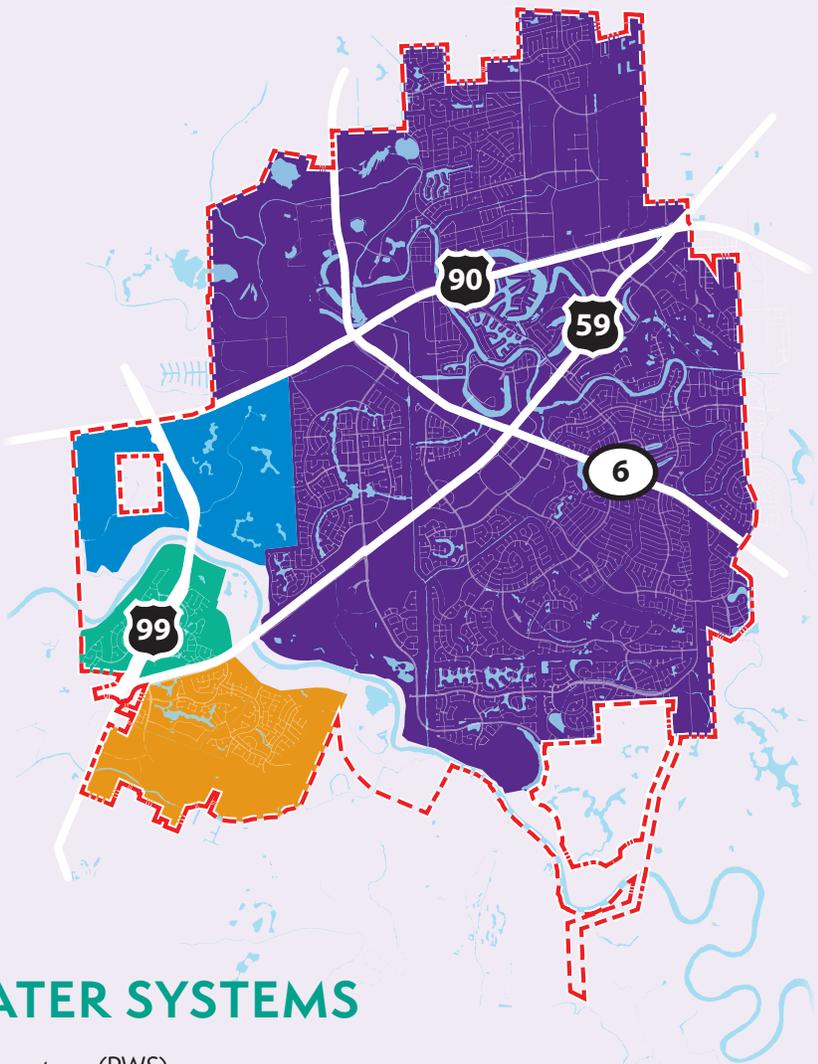
## Potable Water Production and Distribution Profile

2020	Main System	RiverPark System	New Territory System	Greatwood System
Population	85,849	3,672	16,535	12,442
Groundwater Source	Chicot Aquifer and Evangeline Aquifer			
Surface Water Source (Main System)	Brazos River & Oyster Creek			
Annual Demands (billion gallons)	6,073	222	767	794
System Capacity (million gallons / day)	62.5	4.0	11.1	9.2
Daily Average Demands (million gallons)	16.6	0.6	2.1	2.2
Daily Average Demand per Capita (gallons)	193	165	127	174
Number of Groundwater Wells	14	2	3	4
Average Well Depth (feet)	1,250	1,342	1,000	1,600
Well Production Capacity (million gallons / day)	51.6	4.0	11.1	9.2
Surface Water Plant Capacity (million gallons / day)	10.85			
Ground Storage (# of Tanks)	15	2	6	5
Ground storage tank capacity (million gallons)	15.2	0.7	2.3	1.0
Elevated Storage Tanks (million gallons)	5			
Elevated Storage Tank Capacity (million gallons)	6.2			
Miles of Distribution Line	463	21	57	59
Number of Water Meters	28,332	1,406	4,678	4,630

# Water Quality Data

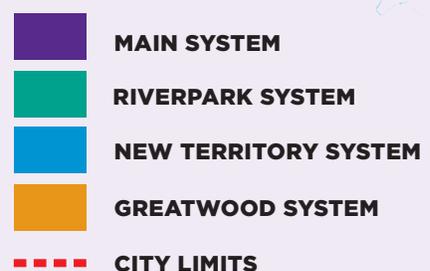
The TCEQ's mission is to protect the public's health and Texas' natural resources. Like the TCEQ, the City's goal is to have clean air and water and to safely dispose of waste. The TCEQ monitors Sugar Land's water by collecting and analyzing water samples for metals, minerals, volatile and semi-volatile organic compounds, disinfectant byproduct compounds and radiological compounds. In addition to the tests that the TCEQ performs, the agency requires that the City of Sugar Land do testing in-house.

In order 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. 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 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 **800-426-4791**.



## SUGAR LAND'S PUBLIC WATER SYSTEMS

The City of Sugar Land operates four independent public water systems (PWS) within the corporate limits of the city. The Main System (PWS 0790005) serves the City east of the Brazos River and the RiverPark System (PWS 0790354) serves the subdivision west of the Brazos River. Greatwood (PWS 0790296) and New Territory (PWS 0790253) Systems serve the Greatwood & New Territory neighborhoods. The four systems are not connected; therefore, water quality data for each system is presented separately in this report.





## DEFINITIONS

The following tables contain scientific terms and measures, some of which may require explanation.

### **ACTION LEVEL (AL)**

The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

### **AVERAGE LEVEL OF QUARTERLY DATA (AVG)**

Regulatory compliance with some Maximum Contaminant Levels are based on running annual average of monthly samples.

### **CONSTITUENT**

Federally regulated or monitored analyte.

### **INORGANIC CONTAMINANTS**

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.

### **LEVEL 1 ASSESSMENT**

A study of the water system to identify potential problems and determine, if possible, why total coliform bacteria were found.

### **LEVEL 2 ASSESSMENT**

A very detailed study of the water system to identify potential problems and determine, if possible, why an Escherichia coli (E. coli) maximum contaminant level (MCL) violation has occurred and/or why total coliform bacteria were found on multiple occasions.

### **MAXIMUM CONTAMINANT LEVEL (MCL)**

The highest permissible level of a contaminant 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 health risk. 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 contaminant.

### **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.

### **MICROBIAL CONTAMINANTS**

Viruses and bacteria which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

### **ORGANIC CHEMICAL CONTAMINANTS**

Synthetic and volatile organic chemicals which are by-products of industrial processes and petroleum production; can also come from gas stations, urban storm water runoff and septic systems.

### **PESTICIDES AND HERBICIDES**

These may come from a variety of sources such as agriculture, urban storm water runoff and residential uses.

### **RADIOACTIVE CONTAMINANTS**

Naturally occurring or the result of oil and gas production and mining activities.

### **TREATMENT TECHNIQUE (TT)**

A required process intended to reduce the level of a contaminant in drinking water.

### **TTHM**

Total Trihalomethanes

### **TURBIDITY**

A measurement of the cloudiness of the water caused by suspended particles. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration.



## IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

### MAIN SYSTEM • Unregulated Contaminants Monitoring Program

The City of Sugar Land’s Main System participated in gathering data under the EPA’s Fourth Unregulated Contaminant Monitoring Rule (UCMR4). Unregulated contaminants are those that don’t yet have a drinking water standard set by EPA. The purpose of monitoring for these contaminants is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. As our customers, you have a right to know that these data are available. UCMR results and occurrence data can be viewed by the public at [EPA’s website](#).

Results for unregulated contaminants detected in the Main System are presented in the table below.

Unregulated Contaminants

Constituent	Year	Average Level Detected	Minimum Level Detected	Maximum Level Detected	Unit of Measure	Likely Source of Contamination
<b>1-Butanol</b>	2020	0.4	0	6.4	ppb	Used as a solvent, food additive and in production of other chemicals
<b>Manganese</b>	2020	8.5	0.4	50.8	ppb	Naturally-occurring element.
<b>HAA6BR</b>	2020	2.9	0	5.3	ppb	By-product of drinking water disinfection.
<b>HAA9</b>	2020	6.4	0	18.4	ppb	By-product of drinking water disinfection.

For additional information on UCMR4, visit [EPA’s website](#) or call the Safe Drinking Water Hotline at (800) 426-4791.

### GREATWOOD SYSTEM • Level 1 Assessment

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

During the past year we were required to conduct one Level 1 assessment. One Level 1 assessment was completed. No corrective actions were required.

For questions regarding City of Sugar Land’s monitoring,  
contact Ashley Kirkpatrick, Laboratory Manager at 281-275-2450 or 311.



## WATER QUALITY DATA TABLES

An important component of water treatment and distribution is compliance with the many state and federal laws and regulations that govern public water systems. The City’s groundwater treatment plants and the SWTP are monitored daily, and monthly reports are submitted to the TCEQ. The data presented in this report is from the most recent testing done in accordance with the regulations. The EPA and the State of Texas require the City of Sugar Land to monitor for certain contaminants less than once per year because the concentrations do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. Unless otherwise noted, the data presented in this report is from testing done in 2020.

### ABBREVIATIONS

<b>N/A:</b>	Not Applicable	<b>pCi/L:</b>	pico Curies per Liter; measure of radioactivity
<b>ND:</b>	None Detected	<b>ppm:</b>	parts per million or milligrams per liter (mg/L)
<b>NTU:</b>	Nephelometric Turbidity Units (a measure of turbidity)	<b>ppb:</b>	parts per billion, or micrograms per liter (µg/L)

## MAIN SYSTEM - 0790005

### Bacteria

Contaminant	Year	MCLG	Total Coliform MCL	Highest # of Total Coliform Positive	Fecal Coliform or E Coli MCL	Total # of Positive E Coli or Fecal Coliform Samples	Violation (Yes/No)	Likely Source of Contamination
<b>Coliform Bacteria</b>	2020	0	TT	1	Routine and repeat samples are total coliform-positive and either is E. coli-positive	0	No	Naturally present in the environment.

### Copper and Lead

Contaminant	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation (Yes/No)	Likely Source of Contamination
<b>Copper</b>	2020	1.3	1.3	0.1877	0	ppm	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
<b>Lead</b>	2020	0	15	1.9	0	ppb	No	Corrosion of household plumbing systems; Erosion of natural deposits.

### Disinfectants and Disinfection By-Products

Contaminant	Year	Average Level of Quarterly Data	Lowest Result of a Single Sample	Highest Result of a Single Sample	MRDLG	MRDL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Chloramines (Chlorine Residual, Total)</b>	2020	2.85	0.54	4.00	4	4	ppm	No	Water additive used to control microbes.
<b>Chlorine Dioxide</b>	2020	18	0	130	800	800	ppb	No	Water additive used to control microbes.
Contaminant	Year	Highest Average Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Haloacetic acids (HAA5)</b>	2020	8.2	0.0	10.9	No Goal for the total	60	ppb	No	By-product of drinking water disinfection.
<b>TTHMs (Total trihalomethanes)</b>	2020	5.2	0.0	5.7	No Goal for the total	80	ppb	No	By-product of drinking water disinfection.
<b>Chlorite</b>	2020	0.41	0.0	0.55	0.8	1	ppm	No	By-product of drinking water disinfection.

### Inorganic Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Major Sources in Drinking Water
<b>Arsenic</b>	2020	3.3	0	3.3	0	10	ppb	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
<b>Barium</b>	2020	0.223	0.112	0.223	2	2	ppm	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
<b>Fluoride</b>	2020	0.41	0.15	0.41	4	4	ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
<b>Nitrate (as Nitrogen)</b>	2020	1.07	0	1.07	10	10	ppm	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
<b>Selenium</b>	2020	11.8	0	11.8	50	50	ppb	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.

### Synthetic Organic Contaminants including Pesticides and Herbicides

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Atrazine</b>	2020	0.32	0.22	0.32	3	3	ppb	No	Runoff from herbicide used on row crops.
<b>2,4-D</b>	2020	0.2	0	0.2	70	70	ppb	No	Runoff from herbicide used on row crops.



Radioactive Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Beta/photon emitters*</b>	2020	4.6	4.6	4.6	0	50*	pCi/L	No	Decay of natural and man-made deposits.
<b>Gross Alpha</b> (excluding Radon & Uranium)	2020	8	8	8	0	15	pCi/L	No	Erosion of natural deposits.
<b>Combined Radium 226 /228</b>	2020	1.96	1.96	1.96	0	5	pCi/L	No	Erosion of natural deposits.
<b>Uranium</b>	2020	8.6	8.6	8.6	0	30	ppb	No	Erosion of natural deposits.

\* EPA considers 50 pCi/L to be the level of concern for beta particles.

Volatile Organic Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Ethylbenzene</b>	2020	0.5	0	0.5	700	700	ppb	No	Discharge from petroleum refineries.
<b>Xylenes</b>	2020	0.0011	0	0.0011	10	10	ppm	No	Discharge from petroleum factories; discharge from chemical factories.

Total Organic Carbon

Total organic carbon has no adverse health effects. Total organic carbon provides a medium for the formation of disinfection byproducts when water is disinfected. Disinfection is necessary to ensure that water does not have unacceptable levels of pathogens. Byproducts of disinfection include trihalomethanes (THMs) and haloacetic acids (HAAs) which are reported on elsewhere in this report.

Constituent	Average	Minimum	Maximum	MCLG	MCL	Unit of Measure	Likely Source of Contamination
<b>TOC- Source Water</b>	4.98	4	5.9	n/a	TT	ppm	Naturally present in the environment.
<b>TOC- Drinking Water</b>	2.64	1.98	3.4	n/a	TT	ppm	Naturally present in the environment.
<b>TOC % Removal</b>	46.6	32.5	59.6	n/a	TT	%	n/a



## Turbidity

Turbidity is a measurement of the cloudiness of the water caused by suspended particles. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration.	Limit (Treatment Technique)	Level Detected	Violation	Likely Source of Contamination
<b>Highest single measurement</b>	<b>1.0 NTU</b>	0.1	N	Soil runoff
<b>Lowest monthly % meeting limit</b>	<b>0.3 NTU</b>	100%	N	Soil runoff

## Secondary Constituents and Other Non-Regulated Contaminants

Contaminant	Year	Average Level Detected	Minimum Level Detected	Maximum Level Detected	Unit of Measure	Secondary MCL
Calcium	2020	43.1	10.2	70.2	ppm	no MCL
Chloride	2020	65.9	32.6	168	ppm	250
Chloroform	2020	0.6	0	2.3	ppb	no MCL
Iron	2020	20	0	150	ppb	300
Magnesium	2020	10.2	6.7	14.9	ppm	no MCL
Nickel	2020	1.1	0	2.8	ppb	100
pH	2020	8.1	7.7	8.5	units	> 7
Potassium	2020	3.6	2.5	5.6	ppm	no MCL
Sodium	2020	66.3	36.6	139.0	ppm	no MCL
Sulfate	2020	36	14	99	ppm	300
Total Alkalinity	2020	174	94	258	ppm	no MCL
Total Dissolved Solids	2020	335	180	646	ppm	1000
Total Hardness as CaCO <sub>3</sub>	2020	180	35	278	ppm	no MCL

# RIVERPARK SYSTEM - 0790354

## Copper and Lead

Contaminant	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation (Yes/No)	Likely Source of Contamination
<b>Copper</b>	2018	1.3	1.3	0.0973	0	ppm	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
<b>Lead</b>	2018	0	15	1	0	ppb	No	Corrosion of household plumbing systems; Erosion of natural deposits.

## Disinfectants and Disinfection By-Products

Contaminant	Year	Average Level of Quarterly Data	Lowest Result of a Single Sample	Highest Result of a Single Sample	MRDLG	MRDL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Chlorine Residual, Free</b>	2020	1.53	1	2.07	4	4	ppm	No	Water additive used to control microbes.
<b>TTHMs (Total trihalomethanes)</b>	2020	1.2	1.2	1.2	No Goal for the total	80	ppb	No	By-product of drinking water disinfection.

## Inorganic Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Major Sources in Drinking Water
<b>Barium</b>	2019	0.169	0.169	0.169	2	2	ppm	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
<b>Fluoride</b>	2020	0.5	0.5	0.5	4	4	ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
<b>Nitrate (as Nitrogen)</b>	2020	0.06	0.06	0.06	10	10	ppm	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
<b>Selenium</b>	2019	3.5	3.5	3.5	50	50	ppb	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.

## Radioactive Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
Uranium	2020	1.2	1.2	1.2	0	30	ppb	No	Erosion of natural deposits.
Combined Radium 226/228	2020	1.5	1.5	1.5	0	5	pCi/L	No	Erosion of natural deposits.

## Secondary and Non-Regulated Conaminants

Contaminant	Year	Average Level Detected	Minimum Level Detected	Maximum Level Detected	Unit of Measure	Secondary MCL
Bromoform	2020	1.1	1.1	1.1	ppb	no MCL
Calcium	2019	47.1	47.1	47.1	ppm	no MCL
Chloride	2020	42	42	42	ppm	250
Chlorodibromomethane	2020	1.2	1.2	1.2	ppb	no MCL
Iron	2019	13	13	13	ppb	300
Magnesium	2019	9.2	9.2	9.2	ppm	no MCL
pH	2020	8.2	8.1	8.2	units	> 7
Potassium	2019	1.87	1.87	1.87	ppm	no MCL
Sodium	2019	40.8	40.8	40.8	ppm	no MCL
Sulfate	2020	10	10	10	ppm	300
Total Alkalinity	2020	188	188	188	ppm	no MCL
Total Dissolved Solids	2020	366	366	366	ppm	1000
Total Hardness as CaCO <sub>3</sub>	2019	155	155	155	ppm	no MCL

# NEW TERRITORY SYSTEM - 0790253

## Bacteria

Contaminant	Year	MCLG	Total Coliform MCL	Highest # of Total Coliform Positive	Fecal Coliform or E Coli MCL	Total # of Positive E Coli or Fecal Coliform Samples	Violation (Y/N)	Likely Source of Contamination
<b>Coliform Bacteria</b>	2020	0	TT	1	Routine and repeat samples are total coliform-positive and either is E. coli-positive	0	No	Naturally present in the environment.

## Copper and Lead

Contaminant	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation (Y/N)	Likely Source of Contamination
<b>Copper</b>	2020	1.3	1.3	0.2426	0	ppm	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
<b>Lead</b>	2020	0	15	0	0	ppb	No	Corrosion of household plumbing systems; Erosion of natural deposits.

## Inorganic Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Major Sources in Drinking Water
<b>Arsenic</b>	2019	2.2	2.2	2.2	0	10	ppb	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
<b>Barium</b>	2019	0.191	0.191	0.191	2	2	ppm	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
<b>Fluoride</b>	2020	0.59	0.25	0.59	4	4	ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
<b>Nitrate (as Nitrogen)</b>	2020	0.1	0	0.1	10	10	ppm	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

### Disinfectants and Disinfection By-Products

Contaminant	Year	Average Level of Quarterly Data	Lowest Result of a Single Sample	Highest Result of a Single Sample	MRDLG	MRDL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Chlorine Residual, Free</b>	2020	1.56	0.66	2.08	4	4	ppm	No	Water additive used to control microbes.
Contaminant	Year	Highest Average Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Haloacetic acids (HAA5)</b>	2020	4.1	0.0	13.3	No Goal for the total	60	ppb	No	By-product of drinking water disinfection.
<b>TTHMs (Total trihalomethanes)</b>	2020	75.2	0.0	161.0	No Goal for the total	80	ppb	No	By-product of drinking water disinfection.

### Radioactive Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Beta/photon emitters*</b>	2015	4.5	0	4.5	0	50*	pCi/L	No	Decay of natural and man-made deposits.
<b>Gross Alpha</b> (excluding Radon & Uranium)	2015	6	2	6	0	15	pCi/L	No	Erosion of natural deposits.
<b>Combined Radium 226 /228</b>	2015	2.4	2.4	2.4	0	5	pCi/L	No	Erosion of natural deposits.
<b>Uranium</b>	2015	2.8	0	2.8	0	30	ppb	No	Erosion of natural deposits.

\* EPA considers 50 pCi/L to be the level of concern for beta particles.

### Secondary Constituents and Other Non-Regulated Contaminants

Contaminant	Year	Average Level Detected	Minimum Level Detected	Maximum Level Detected	Unit of Measure	Secondary MCL
<b>Calcium</b>	2019	14.3	14.3	14.3	ppm	no MCL
<b>Chloride</b>	2020	40.1	40	42	ppm	250
<b>Chlorodibromomethane</b>	2020	0.7	0	1.3	ppb	no MCL
<b>Iron</b>	2019	118	118	118	ppb	300
<b>Magnesium</b>	2019	3.7	3.7	3.7	ppm	no MCL
<b>Manganese</b>	2019	11.2	11.2	11.2	ppb	50
<b>pH</b>	2020	7.9	7.6	8.2	units	> 7
<b>Potassium</b>	2019	2.3	2.3	2.3	ppm	no MCL
<b>Sodium</b>	2019	95.6	95.6	95.6	ppm	no MCL
<b>Sulfate</b>	2020	15	14	16	ppm	300
<b>Total Alkalinity</b>	2020	187	177	196	ppm	no MCL
<b>Total Dissolved Solids</b>	2020	301	288	308	ppm	1000
<b>Total Hardness as CaCO<sub>3</sub></b>	2019	51.1	51.1	51.1	ppm	no MCL

# GREATWOOD SYSTEM - 0790296

## Bacteria

Contaminant	Year	MCLG	Total Coliform MCL	Highest # of Total Coliform Positive	Fecal Coliform or E Coli MCL	Total # of Positive E Coli or Fecal Coliform Samples	Violation (Yes/No)	Likely Source of Contamination
<b>Coliform Bacteria</b>	2020	0	TT	2	Routine and repeat samples are total coliform-positive and either is E. coli-positive	0	No	Naturally present in the environment.

## Copper and Lead

Contaminant	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation (Yes/No)	Likely Source of Contamination
<b>Copper</b>	2019	1.3	1.3	0.14	0	ppm	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
<b>Lead</b>	2019	0	15	0.5	0	ppb	No	Corrosion of household plumbing systems; Erosion of natural deposits.

## Disinfectants and Disinfection By-Products

Contaminant	Year	Average Level of Quarterly Data	Lowest Result of a Single Sample	Highest Result of a Single Sample	MRDLG	MRDL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Chlorine Residual, Free</b>	2020	1.57	0.5	2.42	4	4	ppm	No	Water additive used to control microbes.
<b>Haloacetic acids (HAA5)</b>	2020	0.5	0.0	1.1	No Goal for the total	60	ppb	No	By-product of drinking water disinfection.
<b>TTHMs (Total trihalomethanes)</b>	2020	1.3	0.0	3.9	No Goal for the total	80	ppb	No	By-product of drinking water disinfection.

## Inorganic Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Major Sources in Drinking Water
<b>Arsenic</b>	2018	3	2.3	3	0	10	ppb	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
<b>Barium</b>	2018	0.183	0.164	0.183	2	2	ppm	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
<b>Fluoride</b>	2019	0.58	0.56	0.58	4	4	ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
<b>Selenium</b>	2018	4.1	0	4.1	50	50	ppb	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.

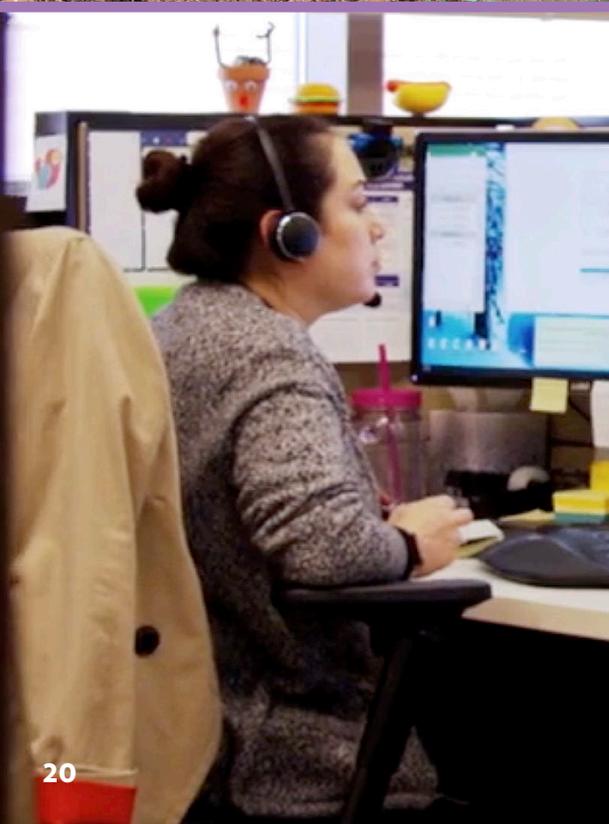
## Radioactive Contaminants

Contaminant	Year	Highest Level Detected	Minimum Level Detected	Maximum Level Detected	MCLG	MCL	Unit of Measure	Violation (Yes/No)	Likely Source of Contamination
<b>Gross Alpha (excluding Radon &amp; Uranium)</b>	2020	6	0	6	0	15	pCi/L	No	Erosion of natural deposits.
<b>Combined Radium 226/228</b>	2020	1.16	0	1.16	0	5	pCi/L	No	Erosion of natural deposits.
<b>Uranium</b>	2020	4	0	4	0	30	ppb	No	Erosion of natural deposits.

\* EPA considers 50 pCi/L to be the level of concern for beta particles.

## Secondary and Other Non-Regulated Contaminants

Contaminant	Year	Average Level Detected	Minimum Level Detected	Maximum Level Detected	Unit of Measure	Secondary MCL
<b>Bromoform</b>	2020	0.6	0	1.2	ppb	no MCL
<b>Calcium</b>	2018	41.2	31.9	50.4	ppm	no MCL
<b>Chloride</b>	2019	52	51	53	ppm	250
<b>Iron</b>	2018	55.5	42	69	ppb	300
<b>Magnesium</b>	2018	7.6	6	9.2	ppm	no MCL
<b>Manganese</b>	2018	5.3	4.9	5.7	ppb	50
<b>Nickel</b>	2018	0.7	0	1.4	ppb	100
<b>pH</b>	2020	7.9	7.7	8.1	units	> 7
<b>Potassium</b>	2018	1.89	1.78	2	ppm	no MCL
<b>Sodium</b>	2018	57.3	37	77.6	ppm	no MCL
<b>Sulfate</b>	2019	11	10	11	ppm	300
<b>Total Alkalinity</b>	2019	209	207	211	ppm	no MCL
<b>Total Dissolved Solids</b>	2019	336	334	338	ppm	1000
<b>Total Hardness as CaCO<sub>3</sub></b>	2018	134	104	164	ppm	no MCL



## WATER LOSS

Each year the City is required to prepare and submit a water-loss audit to the Texas Water Development Board and report the system's water loss to our customers. A water-loss audit is a tool used by water utilities to assess the volume of water produced compared to the volumes of water sold to customers and used to maintain water quality. Water loss cannot be avoided, as line breaks, undetected leaks and line flushing occur throughout any water delivery system.

*“We encourage Sugar Land citizens to contact us when they see a water leak,” said Joe Reyes, Public Works field operations manager. “Our customer service team investigates all water leak calls received by the Public Works Department at 281-275-2450 or 311.”*

In addition to the percentage of water loss, the City uses the Infrastructure Leakage Index (ILI) as a benchmark of leakage in the Main System. The ILI is a methodology developed by the International Water Association and adopted in 2002 by the American Water Works Association as a performance indicator for systems with more than 3,300 connections. The ILI is the ratio of real (actual) water loss versus unavoidable leakage or unavoidable real losses (UARL).

In 2020, water loss in the Main System was 8.4% of the 6.073 million gallons produced, which translates to an ILI of 2.64. Water Loss and ILI for Greatwood was 11.0% and 2.2%; New Territory experienced a loss of 16.9% and ILI of 5.32. In RiverPark water loss was 2.18%; because RiverPark is a smaller system the ILI is not a valid indicator.

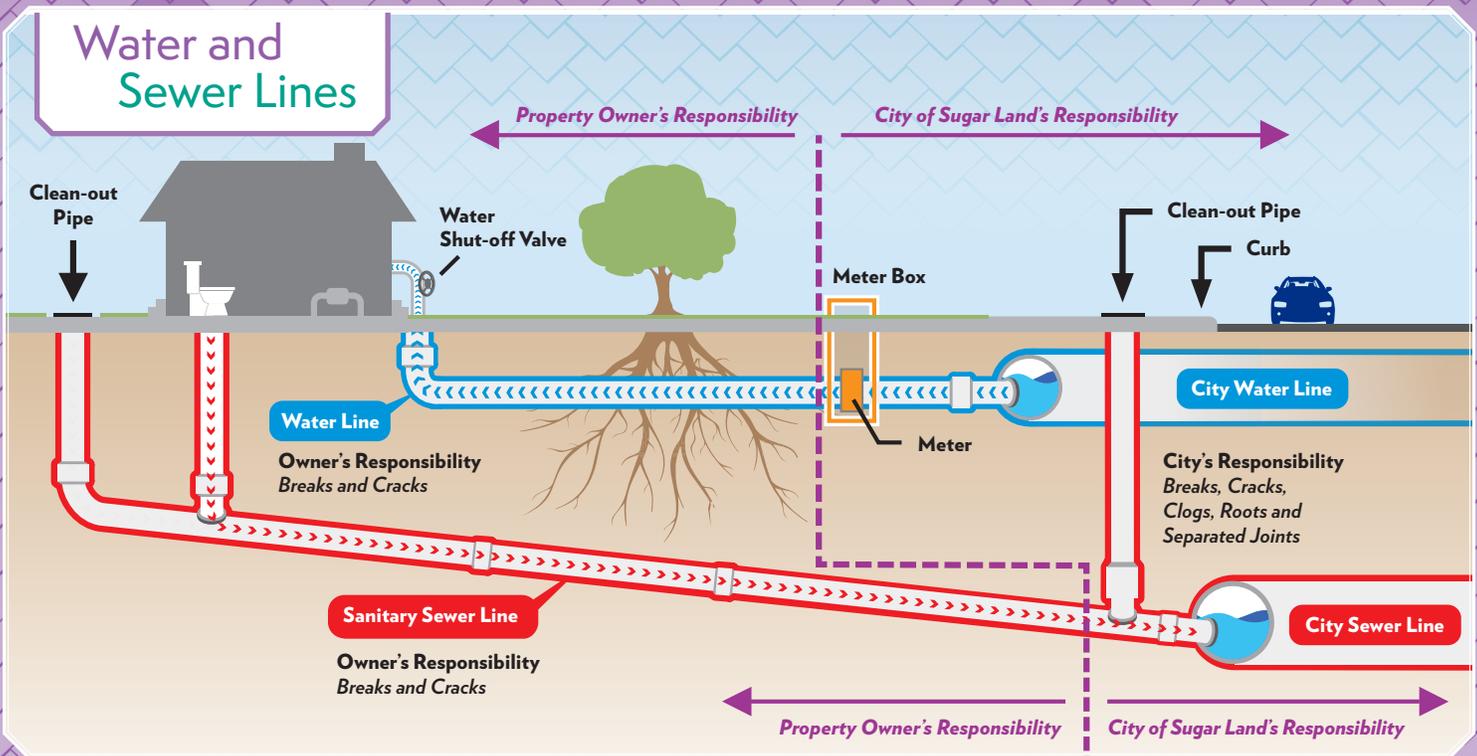
City staff strives to minimize water losses through timely response to all water calls, short time leak repair protocols, routine system maintenance, a robust meter replacement program and documenting water used for system maintenance and water quality.



### REPORT WATER LEAKS

If you see a water leak along a roadway or in a yard, please report it to the **Public Works Department**.

**CALL 24/7: 281-275-2450 or 311**



## AVOID SANITARY SEWER BACK-UPS

In addition to leaks in the City’s water lines, leaks can occur in clogged sewer lines in homes and businesses. The City repairs stoppages in its collection system. Household clogs may require the resident to hire a plumber. Reyes says: “It is always good to call the City first. Hiring a plumber can be costly, and we do not reimburse homeowners for a plumber if the City was not called first.”

Sewer lines can become clogged by fat, oil, grease and feminine hygiene products, among other things. To prevent sewer line stoppages, dispose of the following items in the trash, not in the drain, disposal or toilet.

- egg shells
- “flushable” wipes
- diapers
- fruit and vegetable peels
- hygiene products
- oil or grease

If water is flowing down a drain more slowly than usual or water backs up, report the problem to the City’s **24-hour customer service line** at **281-275-2450 or 311**. If necessary, a city employee will come to a home or business to investigate the problem and determine whether the clog is in the home’s wastewater line or the City’s collection pipe.



### AVOIDANCE STRATEGIES

- Scrape grease and fatty food scraps into the trash.
- Collect cooking oil in container; then either recycle the oil or place the container in the garbage.
- Never pour sauces down the drain, dispose in the trash.
- Potato, vegetable, and egg shell peels belong in the trash or compost bin.
- Only toilet tissue down the toilet; no “flushable” wipes or personal hygiene products.

### COOKING OIL DROP-OFF CENTER

**Public Works Service Center • 101-A Gillingham Lane**  
**Monday-Friday, 8 a.m.-5 p.m.**

City residents may dispose of up to 10 gallons of liquid cooking oil per day at no charge at the Public Works Service Center. The cooking oil recycling center is for residential customers only and includes only liquid cooking grade fats, oils and grease, and not petroleum products. For more information, call 311.

