

CITY OF SUGAR LAND



2012

CITY OF SUGAR LAND ONLINE WATER QUALITY REPORT



DIRECTOR'S MESSAGE

MISSION STATEMENT

The Water Utilities Department takes pride in maintaining a tradition of producing ample 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.

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

A highlight of the Water Utilities Department's year is presenting the annual Water Quality Report to our customers. This annual report represents the commitment and determination of the City's 53 water professionals to consistently produce and deliver safe drinking water to the tap in your home and business. It brings great pleasure to report every water quality standard was met, with no regulatory violations again this year!

The drinking water in both the City's Main system and the City's RiverPark system meets all health-based drinking water criteria and is well below any maximum contaminant levels set by the U.S. Environmental Protection Agency and the Texas Commission on Environmental Quality. The water test results for inorganic, organic and radioactive contaminants; disinfectants and disinfectant by-products; lead and copper levels; and microbiological contaminants are presented in the water quality data tables in this report.

Planning is the foundation of our ability to routinely deliver quality drinking water day after day, year after year. The City's Water Master Plan, which is updated every five years, serves as the implementation guide for future water-related projects and

strategies. The Water Master Plan can be found online at www.sugarlandtx.gov/waterplan. Updating the plan involves gathering public input to outline acceptable water management strategies and goals related to water conservation, alternative water sources like reclaimed water, water quality and drought planning. I invite each of our customers to participate in the Online Town Hall (www.sugarlandtx.gov/onlinetownhall) to comment on water issues impacting the community.

The Water Utilities Department confidently serves Sugar Land and RiverPark. As we plan for the future, our highly trained and dedicated staff continues to maintain high water quality standards and operational efficiency that ranks well above industry standards. Aggressively monitoring water quality, providing preventative maintenance, repairing leaks quickly and actively responding to customer concerns are core principles of our operation.

Please contact us at **281-275-2450** when you have questions, concerns or need to report a problem related to water quality or the City's water system. It is our pleasure to serve you every day.

-SuEllen Staggs
Director of Water Utilities

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

A message from TCEQ:

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; persons 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 providers. Additional guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline (800-426-4791).

IS CRYPTOSPORIDIUM OR GIARDIA IN OUR WATER SUPPLY?

Cryptosporidium and *Giardia* are waterborne, pathogenic organisms. Both are naturally present in the intestines of most mammals, including humans, and are passed into the environment through urban runoff or sewage disposal system failure. Exposure to *Cryptosporidium* or *Giardia* can lead to symptoms such as diarrhea, abdominal discomfort, fever, weight loss, mal-absorption and anemia. Although not life-threatening to healthy adults, *Cryptosporidium* and *Giardia* can be fatal to infants, the elderly, pregnant women and immunocompromised persons.

Neither *Cryptosporidium* nor *Giardia* is found in deep wells such as those used by the City of Sugar Land, which are protected from surface water contamination. For more information about *Cryptosporidium* and *Giardia* and other microbial contaminants, contact the EPA's Safe Drinking Water Hotline at **800-426-4791**.

HOW IS WATER DISINFECTED?

Sugar Land's water is disinfected by adding chlorine or other disinfectant to kill dangerous bacteria and microorganisms that may be in the water. Disinfection is considered to be one of the major public health advances of the 20th century because it protects against fatal waterborne diseases.

PUBLIC NOTICE CONCERNING CHANGES IN DISINFECTANT

The City of Sugar Land is changing the disinfectant used in its drinking water from chlorine to chloramine. This change will not affect residents in the RiverPark subdivision. The City is notifying residents of this change in a number of ways. An announcement was sent to homeowner associations for inclusion in neighborhood newsletters. Letters were sent to area physicians, dialysis centers and the City's wholesale water customer, Fort Bend Municipal Utility District 128. Pet store managers have been provided flyers and have been asked to alert their customers. Notices will also be distributed to the local media.

The following is the official TCEQ notice to City water customers:

On or after July 1, 2013, the City of Sugar Land Public Water System will be changing the disinfectant that we use from chlorine to chloramines. This change is intended to benefit our customers by reducing the levels of disinfection byproducts (DBPs) in the system, while still providing protection from waterborne disease.

Dialysis Patients

However, the change to chloramines can cause problems to persons dependent on dialysis machines. A condition known as hemolytic anemia can occur if the disinfectant is not completely removed from the water that is used for the dialysate. Consequently, the pretreatment scheme used for the dialysis units must include some means, such as a charcoal filter, for removing the chloramine prior to this date. Medical facilities should also determine if additional precautions are required for other medical equipment.

Aquarium Owners

In addition, chloraminated water may be toxic to fish. If you have a fish tank, please make sure that the chemicals or filters that you are using are designed for use in water that has been treated with chloramines. You may also need to change the type of filter that you use for the fish tank.

For questions concerning this change, please contact the Water Quality Manager at **281-275-2450**.



IS SUGAR LAND'S WATER SAFE?

We are pleased to present this year's annual Water Quality Report (aka Consumer Confidence Report or CCR), a snapshot of the City's water quality in 2012. As required by the Safe Drinking Water Act, this report provides details about where your water comes from, what it contains and how it compares to standards set by regulatory agencies. We are committed to providing you with information because informed customers are our best allies.

WATER SOURCE

The City currently draws all of its drinking water from 17 permitted wells at six separate groundwater plants. These are deep wells with an average depth greater than 1,200 feet, producing water from the Chicot and Evangeline aquifers.

SOURCE WATER ASSESSMENT AND SAMPLING REQUIREMENTS

The Texas Commission on Environmental Quality (TCEQ) completed an assessment of the City's source water and the results indicate that some of our sources are susceptible to certain contaminants. The sampling requirements for the water system are based on this susceptibility and previous sample data. If there is any detection of these contaminants, it will be reported in this Consumer Confidence Report. For more information on source water assessments and protection efforts at our system, contact TCEQ at **512-239-4691**.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

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 Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (**800-426-4791**).

WHAT ABOUT COLOR, TASTE AND ODOR?

Contaminants that may be found in drinking water can cause taste, color or odor problems. These types of problems are not necessarily cause for concern. More information on taste, color and odor is available from the City's Water Quality Manager by calling **281-275-2450**.

Many constituents such as calcium, sodium or iron that are often found in drinking water can produce a taste, color and/or odor. 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, but they may affect the appearance and taste of your water. Refer to the Secondary Constituent Tables for information on secondary constituents in the City's water.

WHAT ARE POTENTIAL CONTAMINANTS?

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.

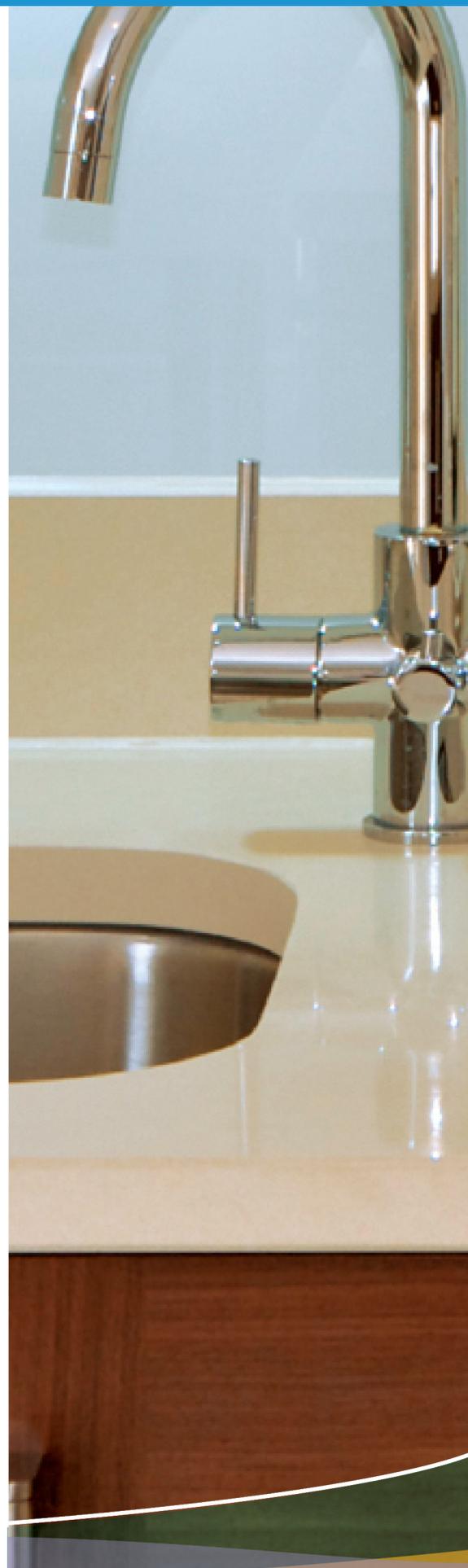
The water can pick up substances resulting from the presence of animals or from human activity, such as:

- microbial contaminants, such as viruses and bacteria, that 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 come from a variety of sources such as agriculture, urban stormwater runoff and residential uses;
- organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and can also come from gas stations, urban stormwater runoff and septic systems; and
- radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

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 (FDA) regulations establish limits for contaminants in bottled water that provide the same protection for public health.

INFORMATION FOR LEAD

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 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 (800-426-4791) or at www.epa.gov/safewater/lead.

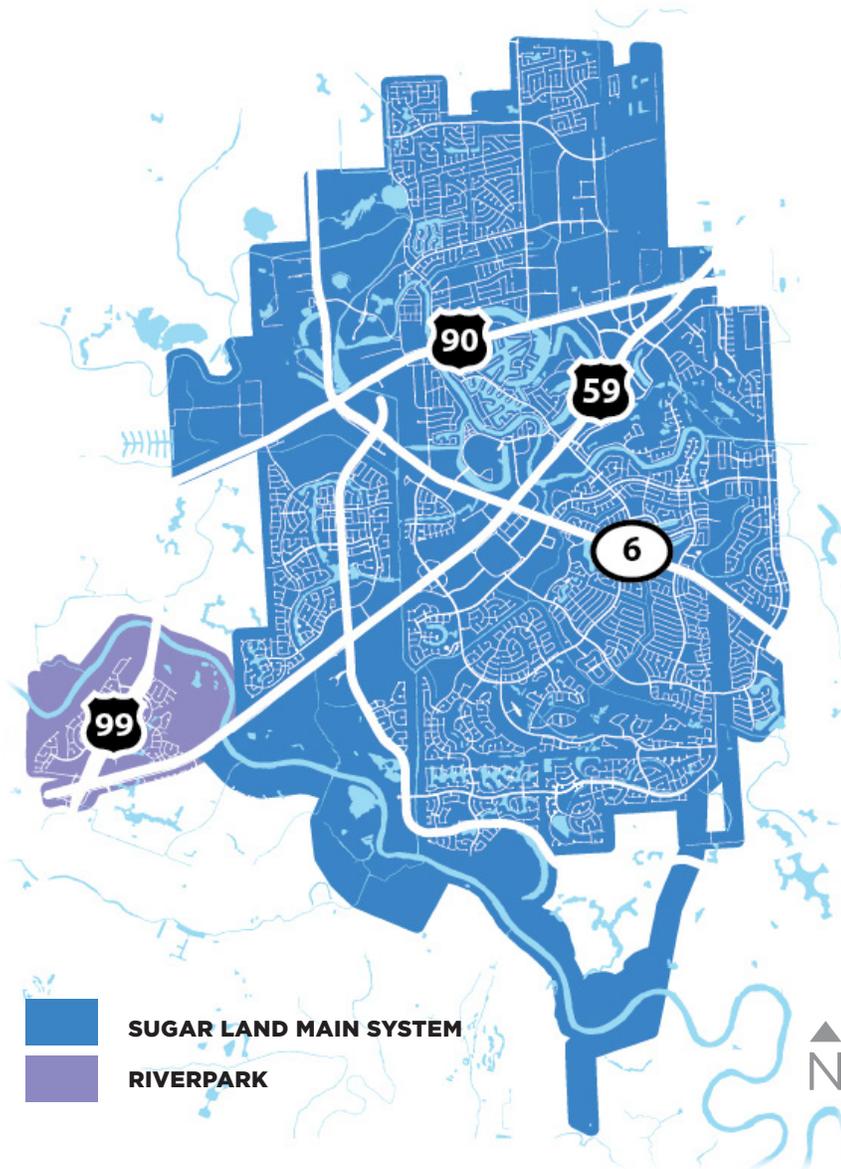


SUGAR LAND WATER SYSTEMS

Within the corporate limits of the City of Sugar Land are two independent public water systems, Public Water System 000790005 that serves the City east of the Brazos River and Public Water System 0790354 that serves the RiverPark development. The two systems operate independently; therefore, water quality data for both systems is presented in this report.

PRODUCTION AND DISTRIBUTION PROFILE CITY OF SUGAR LAND AND SUGAR LAND RIVERPARK

Annual system demand:	7.134 billion gallons
Maximum peak Daily demand:	37.11 million gallons
System capacity:	50.12 million gallons/day
Daily average demand:	19.547 million gallons
Daily average Demand per capita:	229 gallons
Number of wells:	17
Average well depth:	1,250 feet
Ground storage capacity:	12.23 million gallons
Elevated storage facilities:	4 towers/ 4.3 million gallons
Miles of distribution line:	423.4
Number of water meters:	27,435
Number of fire hydrants:	3,817
Number of valves:	5,225
Groundwater source:	Chicot and Evangeline aquifers



Our water comes from high quality groundwater sources and is pumped from deep wells into one of our groundwater plants. Even though our groundwater is already of excellent quality, chlorine is added at our water plants to protect the finished water against microbial contaminants as it travels through the water system. At the same plants, fluoride is added to help prevent tooth decay. We also add corrosion inhibitors to reduce corrosion of metal components within the homeowner's private plumbing system. Water then travels to your residence or place of business where you are provided with top quality and absolutely safe water.



WATER QUALITY DATA

The TCEQ is responsible for overseeing the state's environmental areas, which include the City of Sugar Land's water quality. The TCEQ collects and analyzes samples for metals, minerals, volatile and semi-volatile organic compounds, chlorine byproduct compounds and radiological compounds. In addition to TCEQ-required daily process control samples taken at the water plants and system entry points, the City of Sugar Land performs over 85 bacteriological tests monthly in its two distribution systems and collects quality assurance and quality control samples at least once a week.

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 concerns and are not required to be reported in this document but they may affect the appearance and taste of your water.

UNREGULATED CONTAMINANTS

Unregulated contaminants are those for which the 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.

DEFINITIONS

ACTION LEVEL (AL)

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

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.

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

ABBREVIATIONS

N/A:	Not applicable
ND:	None detected
pCi/L:	pico curies per liter; measure of radioactivity
ppm:	parts per million or milligrams per liter (mg/L)
ppb:	parts per billion, or micrograms per liter (µg/L)

SUGAR LAND - MAIN SYSTEM
PWS 0790005

WATER QUALITY DATA TABLES

In order to ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of contaminants in water provided by public water systems. The tables below list the drinking water contaminants that were tested in the City's Main System and the City's RiverPark System during the calendar year of this report. Substances that were detected are listed first.

All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of

public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels.

The EPA or the state of Texas require the City of Sugar Land to monitor for certain contaminants less than once per year because the concentrations of these contaminants 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 table is from testing done in the calendar year of the report.

SUGAR LAND MAIN SYSTEM - PWS 0790005

REGULATED CONTAMINANTS DETECTED IN 2012

Bacteria

CONTAMINANT	MCLG	Total Coliform MCL	"Highest Monthly % Positive "	Highest number of positive samples in one month	Violation	Likely Source of Contamination
"Coliform Bacteria (E. Coli or Fecal Coliform)"	0	5% of monthly samples are positive.	1.1%	1	No Violation	Naturally present in the environment.

Copper and Lead

CONTAMINANT	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	2012	1.3	1.3	0.495	0	ppm	No Violation	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	2012	0	15	1.86	0	ppb	No Violation	Corrosion of household plumbing systems; Erosion of natural deposits.

Disinfectants and Disinfection By-Products

CONTAMINANT	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Total Trihalomethanes (TTHM)	2012	1	0 - 5	No goal for the total	80	ppb	No Violation	By-product of drinking water disinfection.
CONTAMINANT	Collection Date	Average Level	Range of Levels Detected	MRDLG	MRDL	Units	Violation	Likely Source of Contamination
Chlorine Residual, Free	2012	1.38	.88 - 1.91	4	<4	ppm	No Violation	Disinfectant used to control microbes.

ABBREVIATIONS

N/A: Not applicable **pCi/L:** pico curies per liter; measure of radioactivity **ppb:** parts per billion, or micrograms per liter (µg/L)
ND: None detected **ppm:** parts per million or milligrams per liter (mg/L)

SUGAR LAND - MAIN SYSTEM
PWS 0790005

Inorganic Contaminants

CONTAMINANTS	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Arsenic	2012	3.5	3.5 - 3.5	0	10	ppb	No Violation	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Barium	2012	0.181	0.181 - 0.181	2	2	ppm	No Violation	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride	2012	0.33	0.33 - 0.33	4	4	ppm	No Violation	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate [measured as Nitrogen]	2012	0.08	0 - 0.08	10	10	ppm	No Violation	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

Radioactive Contaminants

CONTAMINANTS	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Beta/photon emitters	2012	8.9	8.9 - 8.9	0	50	pCi/L *	No Violation	Decay of natural and man-made deposits.
Combined Radium 226 / 228	2012	3	3 - 3	0	5	pCi/L	No Violation	Erosion of natural deposits.
Gross Alpha Compliance	2012	8.8	8.8 - 8.8	0	15	pCi/L	No Violation	Erosion of natural deposits.

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

SECONDARY CONSTITUENTS

CONSTITUENT	Secondary Maximum Contaminant Level (MCL) (mg / L)	Year	Recent Maximum (mg / L)
Aluminum	0.05	2008	< 0.02
Bicarbonate	No MCL	2012	242
Calcium	No MCL	2012	47.3
Chloride	300	2012	30
Copper	No MCL	2011	0.0033
Iron	0.30	2012	0.247
Magnesium	No MCL	2012	8.72
Manganese	0.05	2012	0.0451
pH	No MCL	2012	7.75 S.U.
Silver	0.10	2008	< 0.01
Sodium	No MCL	2012	4.7
Sulfate	300	2012	14
Total Alkalinity	No MCL	2012	198
Total Dissolved Solids	1,000	2012	266
Total Hardness as CaCO3	No MCL	2012	154
Zinc	5.00	2012	0.0066

ABBREVIATIONS

N/A: Not applicable

ND: None detected

pCi/L: pico curies per liter; measure of radioactivity

ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion, or micrograms per liter (µg/L)

SUGAR LAND - MAIN SYSTEM PWS 0790005

UNDETECTED CONTAMINANTS

The following contaminants were monitored for, but not detected, in Sugar Land Main Water System.

CONTAMINANTS	MRDLG	MRDL	City Water	Violation	Typical Source
1,1,1-Trichloroethane (ppb)	200	200	ND	No	Discharge from metal degreasing sites and other factories
1,1-Dichloroethylene (ppb)	7	7	ND	No	Discharge from industrial chemical factories
1,1,2-Trichloroethane (ppb)	3	5	ND	No	Discharge from industrial chemical factories
1,2,4-Trichlorobenzene (ppb)	70	70	ND	No	Discharge from textile-finishing factories
1,2-Dichloroethane (ppb)	0	5	ND	No	Discharge from industrial chemical factories
1,2-Dichloropropane (ppb)	0	5	ND	No	Discharge from industrial chemical factories
2,4,5-TP (Silvex) (ppb)	50	50	ND	No	Residue of banned herbicide
2,4-D (ppb)	70	70	ND	No	Runoff from herbicide used on row crops
Antimony (ppb)	6	6	ND	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder; test addition.
Asbestos (MFL)	7	7	ND	No	Decay of asbestos cement water mains; Erosion of natural deposits
Atrazine (ppb)	3	3	ND	No	Runoff from herbicide used on row crops
Benzene (ppb)	0	5	ND	No	Discharge from factories; Leaching from gas storage tanks and landfills
Benzo(a)pyrene (ppt)	0	200	ND	No	Leaching from linings of water storage tanks and distribution lines
Beryllium (ppb)	4	4	ND	No	Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries
Cadmium (ppb)	5	5	ND	No	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; runoff from waste batteries and paints
Carbofuran (ppb)	40	40	ND	No	Leaching of soil fumigant used on rice and alfalfa
Carbon Tetrachloride (ppb)	0	5	ND	No	Discharge from chemical plants and other industrial activities
Chlordane (ppb)	0	2	ND	No	Residue of banned termiticide
Chlorobenzene (monochlorobenzene) (ppb)	100	100	ND	No	Discharge from chemical and agricultural chemical factories
Chromium (ppb)	100	100	ND	No	Discharge from steel and pulp mills; Erosion of natural deposits
cis-1,2-Dichloroethylene (ppb)	70	70	ND	No	Discharge from industrial chemical factories
Cyanide [as Free Cn] (ppb)	200	200	ND	No	Discharge from plastic and fertilizer factories; Discharge from steel/metal factories
Dalapon (ppb)	200	200	ND	No	Runoff from herbicide used on rights of way
Di (2-ethylhexyl) adipate (ppb)	400	400	ND	No	Discharge from chemical factories
Di (2-ethylhexyl) phthalate (ppb)	0	6	ND	No	Discharge from rubber and chemical factories
Dibromochloropropane (DBCP) (ppt)	0	200	ND	No	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
Dinoseb (ppb)	7	7	ND	No	Runoff from herbicide used on soybeans and vegetables
Dioxin (2,3,7,8-TCDD) (ppq)	0	30	ND	No	Emissions from waste incineration and other combustion; Discharge from chemical factories
Diquat (ppb)	20	20	ND	No	Runoff from herbicide use

ABBREVIATIONS

N/A: Not applicable

ND: None detected

pCi/L: pico curies per liter; measure of radioactivity

ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion, or micrograms per liter (µg/L)

UNDETECTED CONTAMINANTS (CONTINUED)

CONTAMINANTS	MRDLG	MRDL	City Water	Violation	Typical Source
Endothall (ppb)	100	100	ND	No	Runoff from herbicide use
Endrin (ppb)	2	2	ND	No	Residue of banned insecticide
Ethylbenzene (ppb)	700	700	ND	No	Discharge from petroleum refineries
Ethylene dibromide (ppt)	0	50	ND	No	Discharge from petroleum refineries
Glyphosate (ppb)	700	700	ND	No	Runoff from herbicide use
Heptachlor (ppt)	0	400	ND	No	Residue of banned pesticide
Heptachlor epoxide (ppt)	0	200	ND	No	Breakdown of heptachlor
Hexachlorobenzene (ppb)	0	1	ND	No	Discharge from metal refineries and agricultural chemical factories
Hexachlorocyclopentadiene (ppb)	50	50	ND	No	Discharge from chemical factories
Lindane (ppt)	200	200	ND	No	Runoff/leaching from insecticide used on cattle, lumber, gardens
Mercury [Inorganic] (ppb)	2	2	ND	No	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland
Methoxychlor (ppb)	40	40	ND	No	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
Nitrite [measured as Nitrogen] (ppm)	1	1	ND	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
o-Dichlorobenzene (ppb)	600	600	ND	No	Discharge from industrial chemical factories
Oxamyl [Vydate] (ppb)	200	200	ND	No	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
p-Dichlorobenzene (ppb)	75	75	ND	No	Discharge from industrial chemical factories
PCBs [Polychlorinated biphenyls] (ppt)	0	500	ND	No	Runoff from landfills; Discharge of waste chemicals
Pentachlorophenol (ppb)	0	1	ND	No	Discharge from wood preserving factories
Picloram (ppb)	500	500	ND	No	Herbicide runoff
Selenium (ppb)	50	50	ND	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Simazine (ppb)	4	4	ND	No	Herbicide runoff
Styrene (ppb)	100	100	ND	No	Discharge from rubber and plastic factories; Leaching from landfills
Tetrachloroethylene (ppb)	0	5	ND	No	Discharge from factories and dry cleaners
Thallium (ppb)	0.5	2	ND	No	Discharge from electronics, glass, and Leaching from ore-processing sites; drug factories
Toluene (ppm)	1	1	ND	No	Discharge from petroleum factories
Toxaphene (ppb)	0	3	ND	No	Runoff/leaching from insecticide used on cotton and cattle
trans-1,2-Dichloroethylene (ppb)	100	100	ND	No	Discharge from industrial chemical factories
Trichloroethylene (ppb)	0	5	ND	No	Discharge from metal degreasing sites and other factories
Vinyl Chloride (ppb)	0	2	ND	No	Leaching from PVC piping; Discharge from plastics factories
Xylenes (ppm)	10	10	ND	No	Discharge from petroleum factories; Discharge from chemical factories

ABBREVIATIONS

N/A: Not applicable

ND: None detected

pCi/L: pico curies per liter; measure of radioactivity

ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion, or micrograms per liter (µg/L)

SUGAR LAND - RIVERPARK SYSTEM
PWS 0790354

SUGAR LAND - RIVER PARK SYSTEM - PWS 0790354

REGULATED CONTAMINANTS DETECTED IN 2012

Lead and Copper

CONTAMINANTS	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	2012	1.3	1.3	0.156	0	ppm	No Violation	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	2012	0	15	1.31	0	ppb	No Violation	Corrosion of household plumbing systems; Erosion of natural deposits.

Inorganic Contaminants

CONTAMINANTS	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Barium	6/14/2010	0.159	0.159 - 0.159	2	2	ppm	No Violation	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Fluoride	2/7/2011	0.58	0.58 - 0.58	4	4	ppm	No Violation	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate [measured as Nitrogen]	2012	0.04	0.04 - 0.04	10	10	ppm	No Violation	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

Radioactive Contaminants

CONTAMINANT	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Gross Alpha Compliance	4/29/2008	3	3 - 3	0	15	pCi/L	No Violation	Erosion of natural deposits.

ABBREVIATIONS

N/A: Not applicable
ND: None detected

pCi/L: pico curies per liter; measure of radioactivity
ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion, or micrograms per liter (µg/L)

SUGAR LAND - RIVERPARK SYSTEM
PWS 0790354

Synthetic Organic Contaminants Including Pesticides and Herbicides

CONTAMINANT	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Di (2-ethylhexyl) phthalate	6/14/2010	0.62 *	0.62 - 0.62	0	6	ppb	No Violation	Discharge from rubber and chemical factories.

* Reported below method quantitation limit

Disinfectants and Disinfection By-Products

CONTAMINANT	Collection Date	Average Level	Range of Levels Detected	MRDLG	MRDL	Units	Violation	Likely Source of Contamination
Chlorine Residual, Free	2012	1.3	0.80 - 1.84	4	<4	ppm	No Violation	Disinfectant used to control microbes.

SECONDARY CONSTITUENTS

CONSTITUENT	Secondary Maximum Contaminant Level (MCL) (mg / L)	Year	Recent Maximum Results (mg / L)
Aluminum	0.05	2008	<0.02
Bicarbonate	No MCL	2011	245
Calcium	No MCL	2010	41.30
Chloride	300	2011	39
Copper	No MCL	2010	<0.002
Iron	0.30	2010	0.021
Magnesium	No MCL	2010	7.61
Manganese	0.05	2010	0.0037
pH	No MCL	2011	7.9 S. U.
Silver	0.10	2010	<0.01
Sodium	No MCL	2010	53.7
Sulfate	300	2011	11
Total Alkalinity	No MCL	2011	201
Total Dissolved Solids	1,000	2011	281
Total Hardness as CaCO3	No MCL	2010	134
Zinc	5.00	2010	0.0079

ABBREVIATIONS

N/A: Not applicable **pCi/L:** pico curies per liter; measure of radioactivity **ppb:** parts per billion, or micrograms per liter (µg/L)
ND: None detected **ppm:** parts per million or milligrams per liter (mg/L)

SUGAR LAND - RIVERPARK SYSTEM PWS 0790354

UNDETECTED CONTAMINANTS

The following contaminants were monitored for, but not detected, in RiverPark water.

Contaminants	MRDLG	MRDL	RiverPark Water	Violation	Typical Source
1,1,1-Trichloroethane (ppb)	200	200	ND	No	Discharge from metal degreasing sites and other factories
1,1-Dichloroethylene (ppb)	7	7	ND	No	Discharge from industrial chemical factories
1,1,2-Trichloroethane (ppb)	3	5	ND	No	Discharge from industrial chemical factories
1,2,4-Trichlorobenzene (ppb)	70	70	ND	No	Discharge from textile-finishing factories
1,2-Dichloroethane (ppb)	0	5	ND	No	Discharge from industrial chemical factories
1,2-Dichloropropane (ppb)	0	5	ND	No	Discharge from industrial chemical factories
2,4,5-TP (Silvex) (ppb)	50	50	ND	No	Residue of banned herbicide
2,4-D (ppb)	70	70	ND	No	Runoff from herbicide used on row crops
Antimony (ppb)	6	6	ND	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder; test addition.
Asbestos (MFL)	7	7	ND	No	Decay of asbestos cement water mains; Erosion of natural deposits
Atrazine (ppb)	3	3	ND	No	Runoff from herbicide used on row crops
Benzene (ppb)	0	5	ND	No	Discharge from factories; Leaching from gas storage tanks and landfills
Benzo(a)pyrene (ppt)	0	200	ND	No	Leaching from linings of water storage tanks and distribution lines
Beryllium (ppb)	4	4	ND	No	Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries
Cadmium (ppb)	5	5	ND	No	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; runoff from waste batteries and paints
Carbofuran (ppb)	40	40	ND	No	Leaching of soil fumigant used on rice and alfalfa
Carbon Tetrachloride (ppb)	0	5	ND	No	Discharge from chemical plants and other industrial activities
Chlordane (ppb)	0	2	ND	No	Residue of banned termiticide
Chlorobenzene (monochlorobenzene) (ppb)	100	100	ND	No	Discharge from chemical and agricultural chemical factories
Chromium (ppb)	100	100	ND	No	Discharge from steel and pulp mills; Erosion of natural deposits
cis-1,2-Dichloroethylene (ppb)	70	70	ND	No	Discharge from industrial chemical factories
Cyanide [as Free Cn] (ppb)	200	200	ND	No	Discharge from plastic and fertilizer factories; Discharge from steel/metal factories
Dalapon (ppb)	200	200	ND	No	Runoff from herbicide used on rights of way
Di (2-ethylhexyl) adipate (ppb)	400	400	ND	No	Discharge from chemical factories
Di (2-ethylhexyl) phthalate (ppb)	0	6	ND	No	Discharge from rubber and chemical factories
Dibromochloropropane (DBCP) (ppt)	0	200	ND	No	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
Dinoseb (ppb)	7	7	ND	No	Runoff from herbicide used on soybeans and vegetables
Dioxin (2,3,7,8-TCDD) (ppq)	0	30	ND	No	Emissions from waste incineration and other combustion; Discharge from chemical factories
Diquat (ppb)	20	20	ND	No	Runoff from herbicide use

ABBREVIATIONS

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ND: None detected

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ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion, or micrograms per liter (µg/L)

UNDETECTED CONTAMINANTS (CONTINUED)

Contaminants	MRDLG	MRDL	RiverPark Water	Violation	Typical Source
Endothall (ppb)	100	100	ND	No	Runoff from herbicide use
Endrin (ppb)	2	2	ND	No	Residue of banned insecticide
Ethylbenzene (ppb)	700	700	ND	No	Discharge from petroleum refineries
Ethylene dibromide (ppt)	0	50	ND	No	Discharge from petroleum refineries
Glyphosate (ppb)	700	700	ND	No	Runoff from herbicide use
Heptachlor (ppt)	0	400	ND	No	Residue of banned pesticide
Heptachlor epoxide (ppt)	0	200	ND	No	Breakdown of heptachlor
Hexachlorobenzene (ppb)	0	1	ND	No	Discharge from metal refineries and agricultural chemical factories
Hexachlorocyclopentadiene (ppb)	50	50	ND	No	Discharge from chemical factories
Lindane (ppt)	200	200	ND	No	Runoff/leaching from insecticide used on cattle, lumber, gardens
Mercury [Inorganic] (ppb)	2	2	ND	No	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland
Methoxychlor (ppb)	40	40	ND	No	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
Nitrite [measured as Nitrogen] (ppm)	1	1	ND	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
o-Dichlorobenzene (ppb)	600	600	ND	No	Discharge from industrial chemical factories
Oxamyl [Vydate] (ppb)	200	200	ND	No	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
p-Dichlorobenzene (ppb)	75	75	ND	No	Discharge from industrial chemical factories
PCBs [Polychlorinated biphenyls] (ppt)	0	500	ND	No	Runoff from landfills; Discharge of waste chemicals
Pentachlorophenol (ppb)	0	1	ND	No	Discharge from wood preserving factories
Picloram (ppb)	500	500	ND	No	Herbicide runoff
Selenium (ppb)	50	50	ND	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Simazine (ppb)	4	4	ND	No	Herbicide runoff
Styrene (ppb)	100	100	ND	No	Discharge from rubber and plastic factories; Leaching from landfills
Tetrachloroethylene (ppb)	0	5	ND	No	Discharge from factories and dry cleaners
Thallium (ppb)	0.5	2	ND	No	Discharge from electronics, glass, and Leaching from ore-processing sites; drug factories
Toluene (ppm)	1	1	ND	No	Discharge from petroleum factories
Toxaphene (ppb)	0	3	ND	No	Runoff/leaching from insecticide used on cotton and cattle
trans-1,2-Dichloroethylene (ppb)	100	100	ND	No	Discharge from industrial chemical factories
Trichloroethylene (ppb)	0	5	ND	No	Discharge from metal degreasing sites and other factories
Vinyl Chloride (ppb)	0	2	ND	No	Leaching from PVC piping; Discharge from plastics factories
Xylenes (ppm)	10	10	ND	No	Discharge from petroleum factories; Discharge from chemical factories

ABBREVIATIONS

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ND: None detected

pCi/L: pico curies per liter; measure of radioactivity
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WATER CONSERVATION TIPS

There are many ways to conserve water. Small changes can make a big difference.

- Take short showers. A five-minute shower uses four to five gallons of water compared to as much as 50 gallons for a bath.
- Turn off the faucet while brushing teeth, washing hair and shaving to save up to 500 gallons a month.
- Use a water-efficient showerhead. They are inexpensive, easy to install and can save up to 750 gallons of water a month.
- Run the clothes and dish washing machines only when they are full, which could save up to 1,000 gallons a month.
- Fix leaky toilets and faucets. To check toilets for a leak, place a few drops of food coloring in the tank and wait. If the blue color seeps into the toilet bowl without flushing, there is a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons of water a month.
- Water plants and lawns only when necessary, no more than 2 days a week.
- Adjust sprinklers so that only grass and landscaping is watered, not sidewalks, driveways and streets.

CROSS CONNECTION CONTROL SURVEY

The City of Sugar Land is proactive in its efforts to prevent contamination of the public water supply. A home or business may have a contamination issue from a “cross connection” in the water pipes, and the owner of the home or business may not even realize it. A cross connection is an unprotected or improper connection to a public water distribution system that may cause contamination or pollution to enter the system. The City of Sugar Land is responsible for enforcing cross connection control regulations and ensuring that no contaminants can, under any flow conditions, enter the distribution system. The City performs cross connection assessments (free of charge) to determine whether a cross connection may exist at your home or business. If you have any of the devices listed

SOURCE WATER PROTECTION TIPS

Protection of drinking water is everyone’s responsibility. You can help protect your community’s drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides; they contain hazardous chemicals that can reach your drinking water source.

CYCLE AND SOAK METHOD

- | | |
|---|---|
| 1 | Cycle: Water for five minutes
Soak: Wait one hour or longer |
| 2 | Cycle: Water again for only five minutes
Soak: Wait another hour or more |
| 3 | Cycle: Water again, if necessary, for five minutes |

- Operate automatic irrigation systems manually, and check for leaks and needed repairs monthly.
- Use the Cycle and Soak method to water the lawn, applying water only as fast as the soil can absorb it.
- Water during the cooler parts of the day to reduce evaporation.
- Teach children about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month’s water bill!
- Follow Sugar Land’s Irrigation Zone Schedule (See Page 16).
- Additional water conservation information is available at www.epa.gov/watersense and www.sugarlandtx.gov/waterutilities.

below, please contact the City’s Water Quality Manager at **281-275-2450** to discuss the issue, and if needed, survey your connection.

- Boiler/radiant heater (water heaters not included)
- Underground lawn sprinkler system
- Pool or hot tub (whirlpool tubs not included)
- Additional source(s) of water on the property (lake or creek water)
- Decorative pond
- Watering trough

- Pick up after your pets.
- Dispose of chemicals properly. Take used motor oil to a recycling center.
- Volunteer in your community. Contact the City’s Stormwater Program Coordinator at **281-275-2450** for more information on how to be involved in protecting our watersheds.

HOW CAN I HELP?

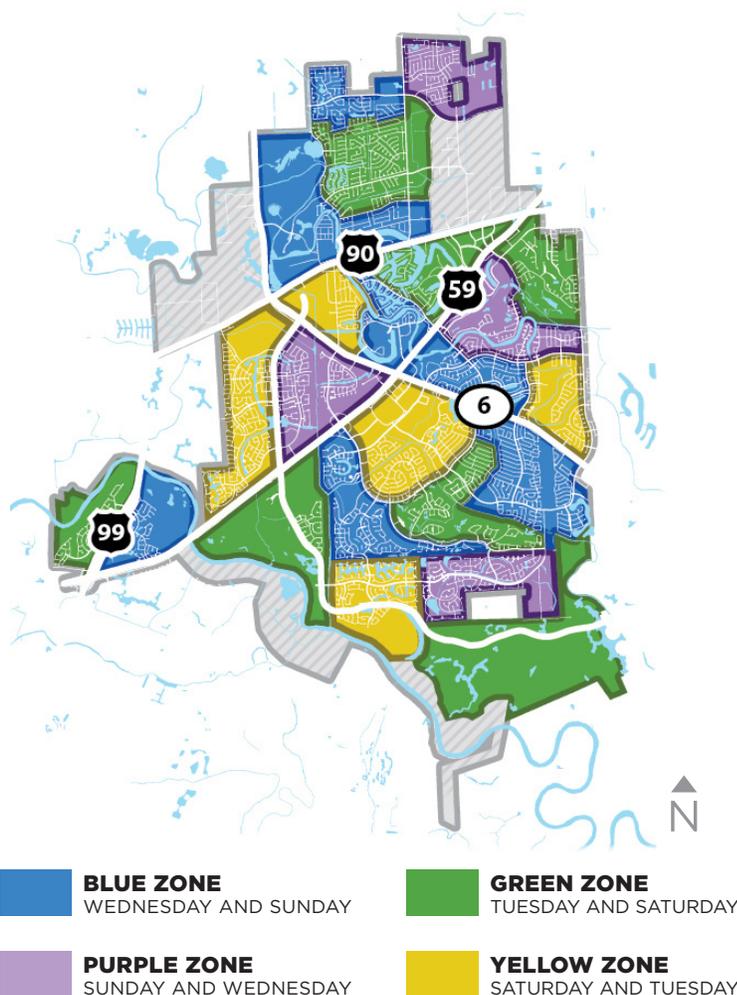
VOLUNTARY TWICE-A-DAY IRRIGATION SCHEDULE (WATER ONLY WHEN NEEDED)

Following a twice-a-week irrigation schedule benefits lawns, reduces water bills and reduces pressure on the City's water wells and infrastructure. The objective of the City's voluntary Irrigation Zone Schedule is to reduce daily demands for water throughout the City. The program ensures that water usage is evenly spread throughout the week. It also promotes responsible water use during the dry summer months.

Adhering to the voluntary two days-a-week watering schedule contributes to healthy landscapes, lower monthly water bills and benefits the City in a number of ways. The Irrigation Schedule reduces peak daily water system demands, extends the lifespan of the City's water system, lowers groundwater usage and helps to achieve long-term water conservation goals.

As shown on the map, the City is divided into four different zones. Neighbors will be in the same zone and water on the same days of the week. Please water before 10 a.m. and after 7 p.m. as well.

You can find the Irrigation Zone Schedule for your neighborhood online at sugarlandtx.gov/irrigation or call the Water Utilities Department at **281-275-2450** to have the schedule sent to you.



CITIZEN INPUT NEEDED FOR WATER PLANNING

The City of Sugar Land is updating its Water Master Plan. The City invites the community to share their thoughts on how to best plan for future water needs. Citizens are encouraged to provide input to help shape water-related goals and policies. Through the month of June, the City will conduct an Online Town Hall offering an opportunity for residents to express their views on long-term water-related issues and planning.

The Water Master Plan is one of the City's eight master plans and is being updated to meet regulatory requirements, integrate surface water conversion, provide water resource planning and develop strategies to implement the water-related goals in the City's recently-

adopted Comprehensive Plan. The update will recommend strategies to address issues such as water conservation and reclamation, water supply and source water protection.

Help get the discussion started by participating in the Online Town Hall at www.sugarlandtx.gov/onlinetownhall. Further opportunities for public participation will include public workshops and meetings. For more information about the Water Master Plan Update and to sign up to receive email updates, visit www.sugarlandtx.gov/waterplan or send project inquiries to waterutilities@sugarlandtx.gov.



If you see a water leak along a roadway or in a yard, please report it to the **Water Utilities Department**.
CALL 24/7: 281-275-2450.

