

# A Primer on Water Quality

## Is your water safe for drinking?

The City of Pearland takes every precaution to ensure it's residents have safe, clean drinking water. Chloramine, a disinfectant, is added to the City's water to protect against microbial contaminants as it travels through the distribution system.

## What is water quality?

Water quality is a measure of the suitability of water for a particular use based on physical, chemical, and biological characteristics. To determine water quality, scientists measure and analyze characteristics of the water such as temperature, mineral content, and bacteria. Those characteristics are then compared to numeric standards and guidelines to decide if the water is suitable for a particular use.

## How is water quality measured?

Some aspects of water quality can be determined in the stream or at the well. These include temperature, acidity (pH), dissolved oxygen, and electrical conductance (an indirect indicator of dissolved content in the water). Analysis of individual minerals, metals, and organic chemicals generally are done at a laboratory.

## Why are there water quality standards and guidelines?

Standards and guidelines are established to protect water for designated uses such as drinking, recreation, agricultural irrigation, or protection and maintenance of aquatic life. Standards for drinking water quality ensure that public drinking water supplies are as safe as possible. The U.S. Environmental Protection Agency (USEPA) is responsible for establishing the standards for Texas Commission on Environmental Quality (TCEQ) in water that have been shown to pose a risk to human health.

# There When You Need Us

Annually, the City of Pearland produces a water quality report covering all testing performed between **January 1 and December 31, 2017**. The City is dedicated to producing drinking water that meets all state and federal standards and continually strives to adopt new methods for delivering the best quality drinking water. As new challenges to drinking water safety emerge, Pearland remains vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of water users.

Remember that Public Works representatives are always available to assist you if you have questions or concerns about your water and can be reached at **281.652.1900**.

The Connect2Pearland app is also available and allows residents to report their concerns directly to the City. To download the app, visit [pearlandtx.gov/c2p](http://pearlandtx.gov/c2p).

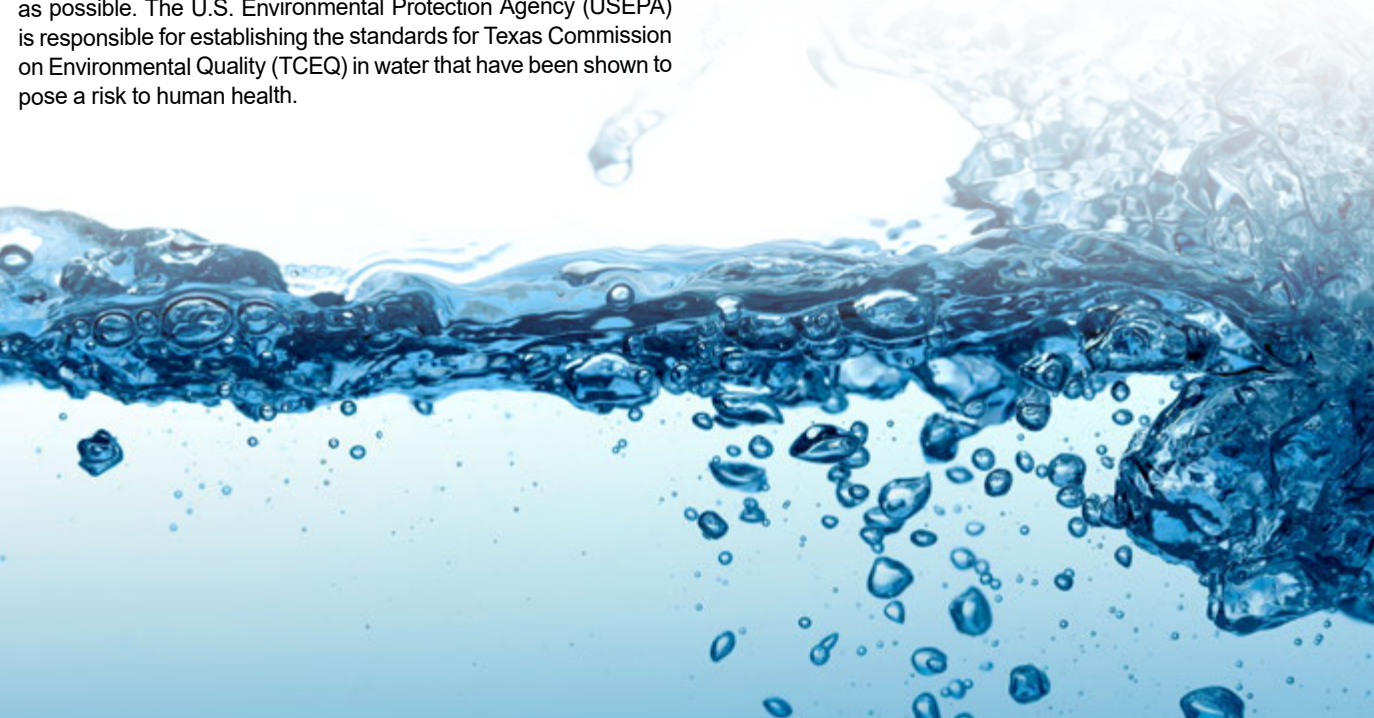
## Subscribe to Resident Alerts

The City of Pearland uses Resident Alerts to communicate with thousands of businesses and residents in minutes during an emergency. To sign up to receive alerts, visit [pearlandtx.gov/alerts](http://pearlandtx.gov/alerts) to self-register by providing the contact information you prefer. Through the system, the City alerts residents about: severe weather, fires, floods, toxic environmental issues, interruptions of water or sewer services, and other critical information. In addition, residents can opt in to receive traffic alerts, general City news and more.



## Do Your Part to Keep Our Water Clean:

- To avoid chemical runoff to our waterways, apply herbicides and pesticides per manufacturer's specifications.
- Water Wisely. Watering too heavily or too often weakens your lawn and causes erosion and runoff pollution.
- Collect your food scraps, oil, and grease to avoid clogging sewer lines, which can cause overflow that pollute nearby creeks and streams.
- When performing preventative maintenance on your vehicles NEVER pour used fluids down the storm drains. This is a major source of contamination of Texas waterways.
- Check your car, boat, motorcycle, and other equipment for leaks and spills. Make repairs as soon as possible.
- Clean up spilled fluids with kitty litter or sand.
- Have your septic system inspected every 2 years, and have the septic tank pumped as necessary – usually every 3 to 5 years.



## Information about Source Water Assessments

The Texas Commission on Environmental Quality (TCEQ) completed an assessment of Pearland's source water and results indicate that some sources are susceptible to certain contaminants. The sampling requirements for the City's water system are based on this susceptibility and previous sample data. Any detection of these contaminants may be found in this Consumer Confidence Report. For more information on source water assessments and protection efforts at our system, call **281.652.1900**.

For more information about your sources of water, please refer to the Source Water Assessment Viewer available at [tceq.texas.gov/gis/swaview](http://tceq.texas.gov/gis/swaview).

Further details about sources and source water assessments are available in Drinking Water Watch at [dww2.tceq.texas.gov/dww](http://dww2.tceq.texas.gov/dww).

## Source of Water

The City of Pearland's water system is supplied by both groundwater and surface water. The City's 10 water wells supply groundwater from the Evangeline and Chicote aquifers. Surface water is supplied through the City's agreement with the City of Houston and Gulf Coast Water Authority at two connection points. The City also has a water connection with Clear Brook City MUD, however it is not utilized at this time. Together, these 13 locations are managed as a system to meet the City's water demand. The City continues to plan for the future to ensure water supply continues to meet demand. The City's future Surface Water Treatment Plant is scheduled to be in service by 2023.

Source Water Name	Type of Water	Report Status	Location
12 - 3945 Well Rd. / SE Well	GW	A	Brazoria County
13 - 1003 E Belgravia	GW	A	Brazoria County
14 - 3910 Kirby Dr.	GW	A	Brazoria County
2 - 2838 McLean	GW	A	Brazoria County
3 - 1801 E. Broadway/ Mary's Creek	GW	A	Brazoria County
6 - 3503 Liberty Dr.	GW	A	Brazoria County
7 - 3812 Magnolia St.	GW	A	Brazoria County
8 - 13711 Sub Garden Rd.	GW	A	Brazoria County
9 - 2529 Cullen Rd.	GW	A	Brazoria County
GW from City of Houston/ GW from Sims Bayou	GW	A	Galveston/ Harris County
Remote - Formerly G0200327C	GW	A	Brazoria County
SW from City of Houston	SW	A	Harris County
SW from Clear Brook City MUD	SW	A	Harris/Brazoria County

## Water Loss

Each year the City is required to prepare and submit a water loss audit to the Texas Water Development Board, and report water loss to our customers. In 2017 the City of Pearland water system produced over 4.56 billion gallons of water and experienced a water loss of 17% (515 million gallons of water.) The City is investing in several projects that will reduce this water loss over the next three years.

The water loss audit is a tool used to assess the volume of water produced compared to the volume of water sold to customers and maintain water quality. Water loss cannot be avoided, as line breaks, undetected leaks and line flushing occur throughout the City's water distribution and delivery system. City staff strives to minimize water losses through timely responses to all water related calls for service, system maintenance, the ongoing water meter replacement project and planned use of leak detection.

## Sampling Results

During the past year, water samples were taken in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The report shows only those contaminants that were detected in the water. The U.S. EPA and the State of Texas requires the City of Pearland to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

## Questions?

For more information about this report, or for any questions relating to the City's drinking water, call **281.652.1900** or visit [pearlandtx.gov/CCR](http://pearlandtx.gov/CCR).

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## CITY OF PEARLAND REPORTING

# 2017

## WATER QUALITY REPORT



[pearlandtx.gov](http://pearlandtx.gov)

PWS# TX0200008

PWS# TX0200411

# Definitions

**A:** Active

**AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**GW:** Groundwater

**MCL (Maximum Contaminant Level):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**MCLG (Maximum Contaminant Level Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**MFL (million fibers per liter):** A measure of the presence of asbestos fibers that are longer than 10 micrometers.

**MRDL (Maximum Residual Disinfectant Level):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**MRDLG (Maximum Residual Disinfectant Level Goal):** 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 contaminants.

**N/A:** Not applicable.

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**pCi/L (picocuries per liter):** A measure of radioactivity.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

**SW:** Surface Water TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.

**TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.

# Important Health Information

While your drinking water meets the U.S. EPA's standard for arsenic, it does contain low levels of arsenic. The U.S. EPA's standard balances the current understanding of arsenic's possible health effects against the cost of removing arsenic from drinking water. The U.S. 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.

You may be more vulnerable than the general population to certain microbial contaminants, such as Cryptosporidium in drinking water. Infants, some elderly, or immune 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. 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 Hot line at **800.426.4791**.

REGULATED SUBSTANCES			CITY OF PEARLAND			CITY OF PEARLAND MUD 1			CITY OF HOUSTON					
Disinfectants and Disinfection By-Products	MCL (MRDL)	MCLG (MRDLG)	Year Sampled	Amount Detected	"Range Low-High"	Year Sampled	Amount Detected	"Range Low-High"	Year Sampled	Amount Detected	"Range Low-High"	Violation	Typical Source	
Haloacetic Acids (HAAs) (ppb)	60	No goal for the total	2017	25	0-36.2	2017	0	0	2017	34	0-58.8	No	By-product of drinking water disinfection.	
Total Trihalomethanes (TTHM) (ppb)	80	No goal for the total	2017	28	0-41.1	2017	3	0-2.9	2016	38	0-60.3	No	By-product of drinking water disinfection.	
Inorganic Contaminants	MCL (MRDL)	MCLG (MRDLG)	Year Sampled	Amount Detected	"Range Low-High"	Year Sampled	Amount Detected	"Range Low-High"	Year Sampled	Amount Detected	"Range Low-High"	Violation	Typical Source	
Arsenic (ppb)	10	0	2017	3.6	0-3.6	2017	0	0	2017	<0.02	<0.02	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes	
Asbestos (MFL)*	7	7	2012	0.1952	0.1952-0.1952	N/A	N/A	N/A	N/A	N/A	N/A	No	Decay of asbestos cement water main; erosion of natural deposits.	
Barium (ppm)	2	2	2017	0.208	0.143-0.208	2017	0	0	2017	0.0463	0.045-0.048	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.	
Fluoride (ppm)	4.0	4	2017	1.43	0.46-1.43	2017	0	0	2017	0.29	0.20-0.48	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.	
Nitrate (measured as Nitrogen) (ppm)	10	10	2017	1	0-1.16	2017	0	0	2017	0.57	0.30-0.86	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of Natural deposits.	
Cyanide (ppb)	200	200	2017	20	0-20	2017	0	0	2017	30	0-70	No	Discharge from plastic ad fertilizers factories; Discharge from steel/metal factories.	
Radioactive Contaminants	MCL (MRDL)	MCLG (MRDLG)	Year Sampled	Amount Detected	"Range Low-High"	Year Sampled	Amount Detected	"Range Low-High"	Year Sampled	Amount Detected	"Range Low-High"	Violation	Typical Source	
Gross alpha excluding radon and uranium (pCi/L)	15	0	2017	3.4	0-3.4	2017	0	0	2017	<3.0	0-0	No	Erosion of natural deposits.	
Xylenes (ppm)	10	10	2017	0.0073	0-0.073	2017	0	0	2017	0.0022	0-0.0022	No	Discharge from petroleum factories. Discharge from chemical factories.	
Beta/photon emitters (pCi/L)	50	0	2017	4.2	0-4.2	2017	0	0	2017	4.3	0-4.8	No	Decay of natural and man-made deposits.	
Synthetic organic contaminants including pesticides and herbicides	MCL (MRDL)	MCLG (MRDLG)	Year Sampled	Amount Detected	"Range Low-High"	Year Sampled	Amount Detected	"Range Low-High"	Year Sampled	Amount Detected	"Range Low-High"	Violation	Typical Source	
Atrazine (ppb)	0.003	3	2017	0	0	2017	0	0	2017	1	0.12-0.26	No	Runoff from herbicide used on row crops.	
Ethylbenzene (ppb)	700	700	2017	0.5	0-0.5	2017	0	0	2017	0	0	No	Discharge from petroleum refineries.	
Simazine (ppb)	0.004	4	2017	0	0	2017	0	0	2017	0.13	0-0.20	No	Herbicide runoff.	
Lead and Copper	Action Level (AL)	MCLG	Year Sampled	Amount Detected (90th Percentile)	Sites above AL/Total Sites	Year Sampled	Amount Detected (90th Percentile)	Sites above AL/Total Sites	Year Sampled	Amount Detected (90th Percentile)	Sites above AL/Total Sites	Violation	Typical Source	
Copper (ppm)**	1.3	1.3	2015	0.56	1	2015	0.27	0	2017	0.0275	0	No	Erosion of natural deposits; leaching from wood preservatives; corrosion of household plumbing system.	
Lead (ppb)**	15	0	2015	3.5	0	2015	0.31	0	2017	0	0	No	Corrosion of household plumbing systems; erosion of natural deposits	
Disinfection Residual Table														
Disinfectant (ppm)	MRDL	MRDLG	Year	Average Level	Range	Year	Average Level	Range	Year	Average Level	Range	Violation	Typical Source	
Chloramines (TOTAL) (PWS# 0200008)	4	4	2017	2.73	0.5-3.9	N/A	N/A	N/A	N/A	N/A	N/A	N	Water additive used to control microbes	
Chlorine (FREE) (PWS# 0200411)	4	4	N/A	N/A	N/A	2017	1.49	0.1-2.20	N/A	N/A	N/A	N	Water additive used to control microbes	
Total Coliforms	Total coliform bacteria are used as indicators of microbial contamination of drinking water because testing for them is easy. While not disease causing organisms themselves, they are often found in association with microbes that are capable of causing disease. Coliform bacteria are more hardy than many disease causing organisms; therefore, their absence from water is a good indication that the water is microbially safe for human consumption.													
Total Coliforms	MCLG	Year	Total Coliform MCL	# of Positive	Year	Total Coliform MCL	# of Positive	Year	Total Coliform MCL	# of Positive	Violation	Typical Source		
	0	2017	0	0	2017	0	0	N/A	N/A	N/A	N	Naturally present in the environment		
Turbidity	Turbidity is a measurement of the cloudiness of the water caused by suspended solid particles. The City monitors this because it is a good indicator of water quality.													
Turbidity (NTU)	MCL	Year	N/A	N/A	N/A	Year	N/A	N/A	Year	Lowest monthly percentage of samples <0.3 NTU	Average	Annual Max	Violation	Typical Source
	0.3	N/A	N/A	N/A	N/A	2017	N/A	N/A	2017	100%	0.08	0.29	No	Soil Runoff

\* Asbestos - Measured every 9 years. Next testing will occur in 2021.

\*\*Lead & Copper - Measured every 3 years. Next testing will occur in 2018.