

2013 Drinking Water Quality Report

City of Houston



Department of Public Works & Engineering



2013 Water Quality Report

En Español

Este informe incluye información importante sobre el agua potable. Si tiene preguntas o comentarios sobre éste informe, favor de llamar al tel.311 para hablar con una persona bilingüe en español.

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This report lists all of the federally regulated or monitored contaminants which have been found in your drinking water. The U.S. Environmental Protection Agency (EPA) requires water systems to test for up to 97 contaminants. If a contaminant was reported in a prior year's report, but is not detected in this report year's samples, that contaminant has been removed from the list.

All drinking water may contain contaminants. When drinking water meets federal standards, there may not be any health based benefits to purchasing bottled water or point of use devices. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791).

A BIRD'S-EYE VIEW

GENERAL INFORMATION & FAQs ABOUT HOUSTON WATER

1. Where does our water come from?

Roughly 85 - 90% of our supply is surface water from

- the San Jacinto River through Lake Conroe and Lake Houston, and
- the Trinity River, through Lake Livingston.

The remaining 10 -15% percent is groundwater wells supplied by

- the Evangeline aquifer, and
- the Chicot aquifer.

2. What are the pH, hardness and dissolved solids of Houston water?

Here are typical ranges for these parameters:

Total Hardness: 100-150 mg/L as CaCO₃

pH: 7.2 - 8.5 standard units

Dissolved Solids: 100-250 mg/L

3. How is the water disinfected?

All of our water systems use chlorine to kill viruses and potentially harmful bacteria that may be present. Most of our systems use free chlorine (chlorine alone) to do the job; however our largest system - the Main System - uses chloramines, which are made by combining chlorine and ammonia together. Chloramines have a longer life-span than free chlorine and help keep adequate disinfection throughout the full distance of our system water lines.

4. Does our water contain fluoride?

Yes. Low levels of fluoride are present in our raw water at levels up to 0.3 mg/L. Additionally the City adds fluoride, as needed, to meet the recommendations of the Department of Health and Human Services (HHS) and the Environmental Protection Agency (EPA). There is considerable scientific evidence and support that fluoride is effective in preventing tooth decay throughout a person's lifetime. We target fluoride levels to remain under 0.7 mg/L which is the optimal level the HHS and EPA recommends for community water fluoridation.

A SNOWY EGRET FLIES ABOVE THE WATERS OF LAKE HOUSTON.

PHOTO BY VICTOR NGUYEN, CITY OF HOUSTON EMPLOYEE

Special Notice for the ELDERLY, INFANTS, CANCER PATIENTS, people with HIV/AIDS or other immune problems: 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* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.



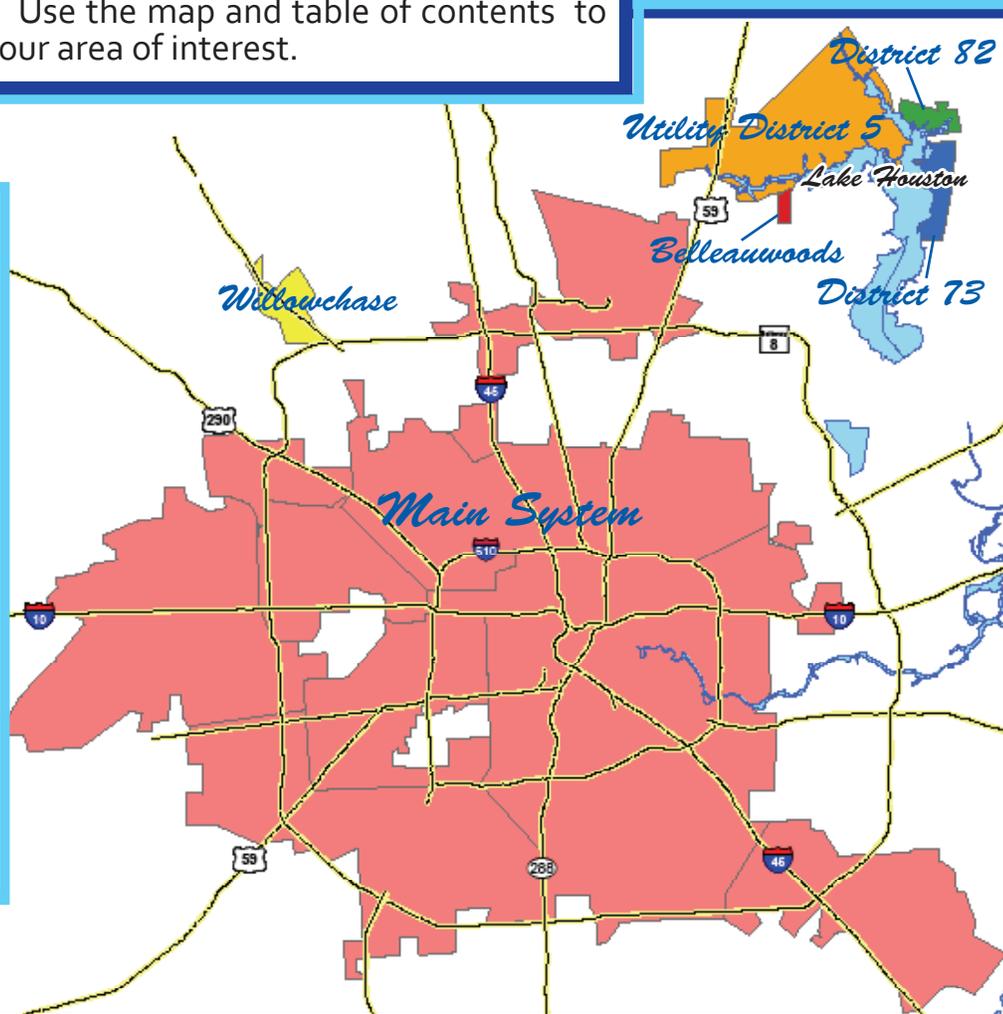
City of Houston Drinking Water



The City of Houston 6 Community Public Water Systems are shown on the map here. Use the map and table of contents to see 2013 sample results for your area of interest.

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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 and through the ground, it dissolves naturally-occurring minerals, and in some cases, radioactive material. It can also pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water before treatment include: microbes, inorganic contaminants, pesticides, herbicides, radioactive contaminants, and organic chemical contaminants.

-Our Mission -

“...to provide drinking water, wastewater collection and treatment, stormwater drainage, and streets; and do so responsibly, effectively, efficiently, and in an environmentally responsible fashion to serve our customers.”

•Department of Public Works and Engineering•

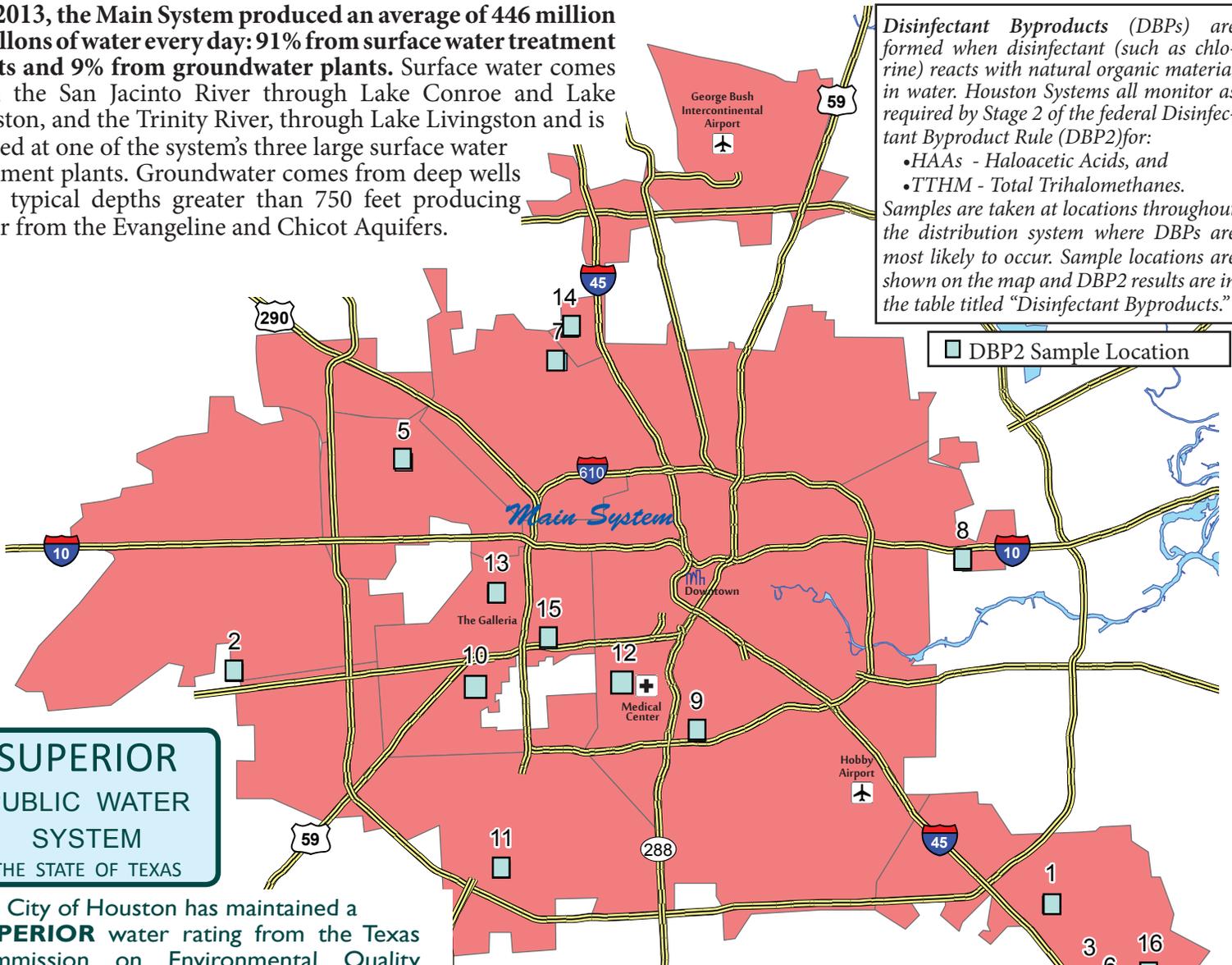


In 2013, the Main System produced an average of 446 million gallons of water every day: 91% from surface water treatment plants and 9% from groundwater plants. Surface water comes from the San Jacinto River through Lake Conroe and Lake Houston, and the Trinity River, through Lake Livingston and is treated at one of the system's three large surface water treatment plants. Groundwater comes from deep wells with typical depths greater than 750 feet producing water from the Evangeline and Chicot Aquifers.

Disinfectant Byproducts (DBPs) are formed when disinfectant (such as chlorine) reacts with natural organic material in water. Houston Systems all monitor as required by Stage 2 of the federal Disinfectant Byproduct Rule (DBP2) for:

- HAAs - Haloacetic Acids, and
- TTHM - Total Trihalomethanes.

Samples are taken at locations throughout the distribution system where DBPs are most likely to occur. Sample locations are shown on the map and DBP2 results are in the table titled "Disinfectant Byproducts."



SUPERIOR
PUBLIC WATER
SYSTEM
THE STATE OF TEXAS

The City of Houston has maintained a **SUPERIOR** water rating from the Texas Commission on Environmental Quality since 1995. A system rated as **SUPERIOR** meets or exceeds all federal and state requirements for:

- Production and storage capacity
- Staffing and operator licenses
- Primary water quality standards (mandatory standards for regulated contaminants)
- System operation and pressure maintenance
- Secondary quality standards (nonenforceable guidelines that address aesthetic and cosmetic aspects of drinking water)

Unregulated Contaminants*
Results for the Third Unregulated Contaminant Monitoring Rule

Contaminant (units)	Min	Avg	Max
Bromochloromethane (ppb)	ND	0.003	0.120
1,4-Dioxane (ppb)	ND	0.003	0.091
Perfluoroheptanoic acid (PFHpA)	ND	0.0002	0.01
Vanadium (ppb)	ND	1.1	16
Strontium (ppb)	ND	182	640
Molybdenum (ppb)	ND	0.99	4.80
Cobalt (ppb)	ND	0.01	2.10
Chromium	ND	0.3	4.7
Hexavalent Chromium(CrO4) (ppb)	ND	0.7	5.1
Chlorate (ppm)	ND	0.03	0.52

*Read about unregulated contaminants on page 12.



"Houston Proud. I am proud to be associated with the City of Houston drinking water, over 400 trained professionals working hard, serving the public the best quality water possible."

-Assistant Manager, 22 years with the City of Houston

Disinfectant and Bacteriological Indicators

	Regulatory Requirements		2013 Detections	
Chloramines (Disinfectant)	MRDLG	MRDL	Chloramine Levels	
	< 4.0 ppm	4.0 ppm	Avg 1.96 ppm	Max 3.8 ppm
Total Coliform*	MCLG	MCL	Total Coliform Detections	
	0 detections	Presence of coliform bacteria in more than 5% of monthly samples.	Highest monthly percentage of positive samples: 1.3%	
Turbidity	TT (Treatment Technique)		Turbidity Measurements	
	95% or more of samples tested each month less than or equal to 0.3 NTU.		Lowest monthly percentage of samples < 0.3 NTU: 96.1% Highest Single Measurement: 0.68 NTU	

*Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. When coliform is detected the system is required to follow-up with additional sampling to confirm the integrity of the water or determine if there is a problem. All follow-up samples indicated that the water was safe and free of coliform.

Inorganic Contaminants

Contaminant (units)	Regulatory Requirements		2013 Detections		
Arsenic (ppb) ¹	0	10	ND	1.1	8.4
Barium (ppm)	2	2	0.05	0.10	0.38
Fluoride (ppm)	4	4	0.21	0.41	0.66
Nitrate (ppm)	10	10	ND	0.21	0.64
Nitrite (ppm)	1	1	ND	0.01	0.25
Lead (ppb) (2012) ²	0	AL = 90% below 15 ppb	90% below 3.72 ppb No sample above 15 ppb		
Copper (ppm) (2012) ²	1.3	AL = 90% below 1.3 ppm	90% below 0.255 ppm One sample above 1.3 ppm at 1.77 ppm		

Synthetic and Volatile Organic Contaminants

Atrazine (ppb)	3	3	0	0.24	0.42
Simazine (ppb)	4	4	0	0.09	0.17
HEX (ppb) ³	50	50	0	0.01	0.13

Radiological Contaminants

Gross Alpha (pCi/L)	0	15	6.5
Combined Radium (pCi/L)	0	5	1.5
Combined Uranium (ppb)	0	30	3.8

Disinfectant Byproducts

Locations shown on system map

Highest locational average for each contaminant is highlighted yellow

DBP Sample Location	Haloacetic Acids			Total Trihalomethanes		
	Min	Avg	Max	Min	Avg	Max
DBP2-01	13.8	21.2	32.0	16.8	27.9	37.3
DBP2-02	0.0	7.0	12.7	18.5	23.3	27.2
DBP2-03	14.4	15.6	17.3	19.5	25.9	30.3
DBP2-04	10.3	15.7	22.1	20.2	27.5	43.3
DBP2-05	15.9	18.1	21.9	14.2	21.5	32.6
DBP2-06	12.5	19.2	28.6	13.6	24.9	35.0
DBP2-07	13.7	15.7	17.0	18.7	25.3	28.8
DBP2-08	12.1	16.1	25.8	14.6	25.9	35.9
DBP2-09	13.4	17.5	27.5	17.6	25.0	34.6
DBP2-10	0.0	5.1	10.2	7.2	11.5	15.7
DBP2-11	14.9	18.3	23.9	20.4	28.7	37.8
DBP2-12	13.9	20.3	30.2	17.4	26.7	34.1
DBP2-13	13.7	18.1	21.1	18.9	25.8	29.7
DBP2-14	13.6	20.0	31.0	19.3	28.8	35.3
DBP2-15	14.4	18.7	24.3	18.0	26.2	35.0
DBP2-16	14.8	16.0	17.0	19.5	25.7	33.9

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

(2) Detected contaminants within the past five years - subject to reduced monitoring requirements.

(3) HEX = Hexachlorocyclopentadiene

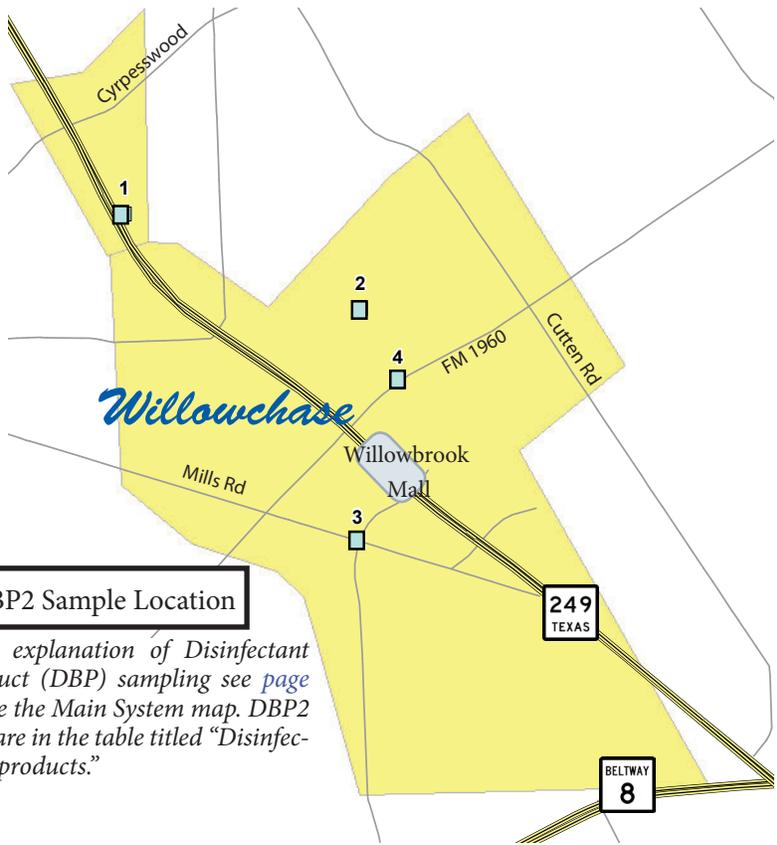
-Our Vision -

To be a rock solid, responsive and respected performance organization for the City of Houston and its citizens; to be the premier public works department in the United States.

•Department of Public Works and Engineering•



The Willowchase water system provides water to approximately 13,500 people and relies solely on groundwater. Groundwater treatment plants receive water from 5 area wells. These wells draw water from the Evangeline and Chicot Aquifers, with typical depths greater than 750 feet. In 2013 this system provided an average of 2.4 million gallons per day to customers!



□ DBP2 Sample Location

*For an explanation of Disinfectant Byproduct (DBP) sampling see page 3, above the Main System map. DBP2 results are in the table titled "Disinfectant Byproducts."

Use Water Wisely

Fix faucet leaks!
Small faucet leaks in the home can waste up to 3,000 gallons of water per year.

Water Works Education Center

The City of Houston Water Works Center is a fun place to learn about water and drinking water treatment. The center offers tours by schedule and provides a great destination for schools groups and visitors of all ages.

For more information visit www.houstonwaterworks.org



Disinfectant and Bacteriological Indicators

	Regulatory Requirements		2013 Detections	
Chlorine (Disinfectant)	MRDLG	MRDL	Chlorine Levels	
	< 4.0 ppm	4.0 ppm	Avg	Max
			1.2 ppm	1.7 ppm
Total Coliform	MCLG	MCL	Total Coliform Detections	
	0 detections	Presence of coliform bacteria in more than one sample per month.	0 positive samples found in 2013	

Inorganic Contaminants

	Regulatory Requirements		2013 Detections		
Contaminant (units)	MCLG	MCL	Min	Avg	Max
Arsenic (ppb) (2011) ⁽¹⁾⁽²⁾	0	10	2.5	2.55	2.6
Barium (ppm) (2011) ⁽¹⁾	2	2	0.24	0.27	0.30
Selenium (ppb) (2011) ⁽¹⁾	50	50	3.2	4.5	5.8
Fluoride (ppm) (2012) ⁽¹⁾	4	4	0.14	0.15	0.16
Nitrate (ppm)	10	10	0.19	0.205	0.22
Lead (ppb) (2011) ⁽¹⁾	0	AL = 90% below 15 ppb	90% below 1.7 ppb - No sample above 15 ppb		
Copper (ppm) (2011) ⁽¹⁾	1.3	AL = 90% below 1.3 ppm	90% below 0.42 ppm - No sample above 1.3 ppm		

Radiological Contaminants

Gross Alpha (pCi/L) (2012) ¹	0	15	4.9		
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(1) Detected contaminants within the past five years - subject to reduced monitoring requirements.

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

Stage 2 Disinfectant Byproducts

locations shown on system map

Highest locational average for each contaminant is highlighted yellow

	Haloacetic Acids			Total Trihalomethanes		
	Min	Avg	Max	Min	Avg	Max
MCL: 60 µg/L (LRAA)				MCL: 80 µg/L (LRAA)		
DBP 2 Sample Location	Min	Avg	Max	Min	Avg	Max
DBP2-01	ND	0.3	1.0	ND	1.0	3.7
DBP2-02	ND	ND	ND	ND	1.2	3.5
DBP2-03	ND	ND	ND	ND	0.3	1.1
DBP2-04	ND	ND	ND	ND	1.0	3.7

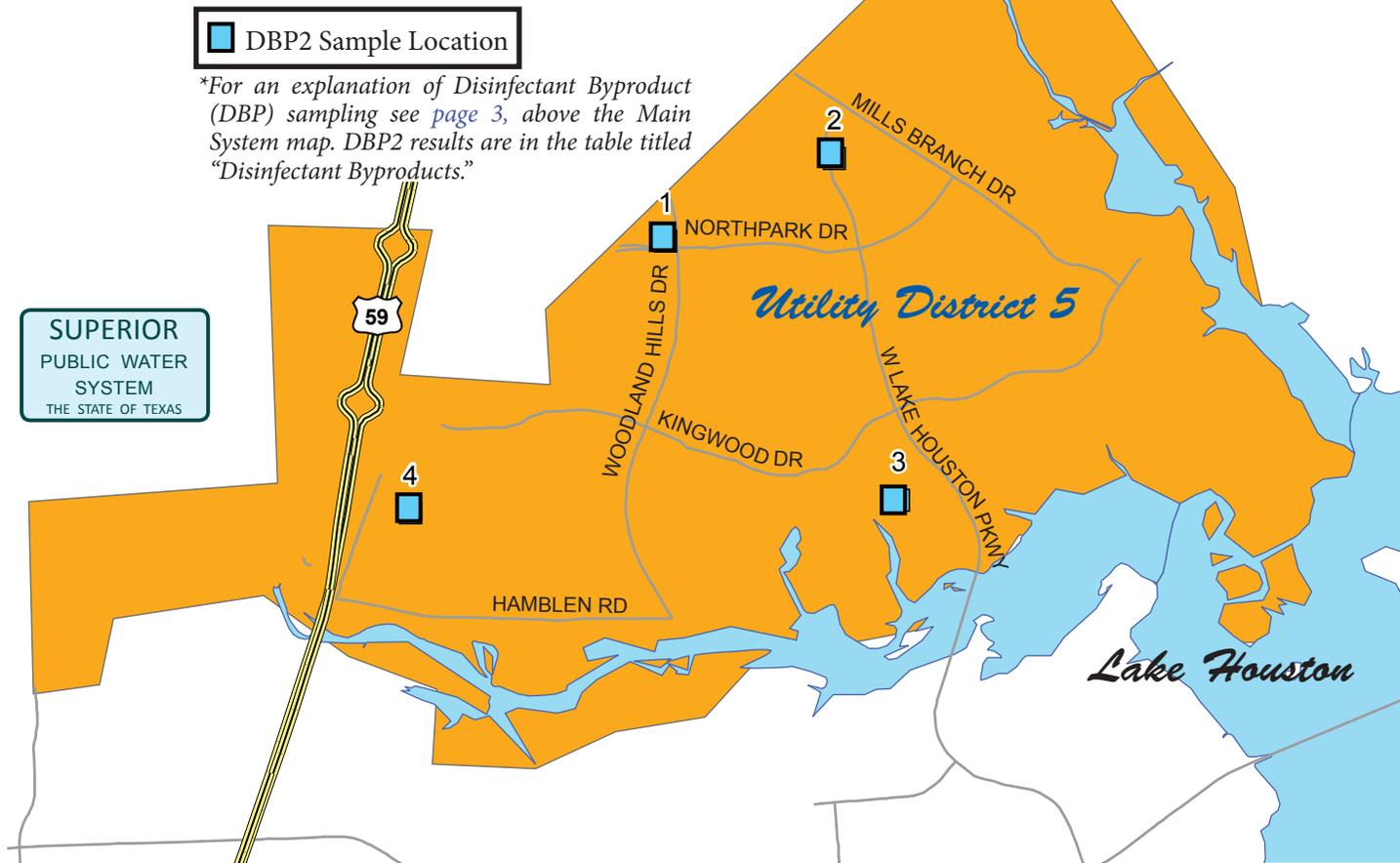
-Our Values-

Commitment to excellence through continuous improvement, integrity, competence, innovation, courage and selfless service. Trustworthiness is the essential catalyst for effective teamwork.

•Department of Public Works and Engineering•



Kingwood PWS serves a population of 76,000 and in 2013 provided an average of 8.5 million gallons per day to customers. Water is provided from 15 groundwater wells located throughout the Kingwood area. These are deep wells with typical depths greater than 750 feet, producing water from the Evangeline and Chicot Aquifers.



The City VOLUNTARILY participates in the Partnership for Safe Water Program. This program's goal is to provide an additional measure of safety to Americans by implementing prevention programs where legislation or regulation does not exist. The City of Houston has received 24 awards through this program for its Water Treatment Plants.



Disinfectant and Bacteriological Indicators

Regulatory Requirements		2013 Detections		
Chlorine (Disinfectant)	MRDLG	MRDL	Chlorine Levels	
	< 4.0 ppm	4.0 ppm	Avg	Max
			1.3 ppm	2.4 ppm
Total Coliform*	MCLG	MCL	Total Coliform Detections	
	0 detections	Presence of coliform bacteria in more than 5% of monthly samples.	Highest monthly percentage of positive samples: 2.0%	

*Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. When coliform is detected the system is required to follow-up with additional sampling to confirm the integrity of the water or determine if there is a problem. All follow-up samples indicated that the water was safe and free of coliform.

Inorganic Contaminants

Contaminant (units)	Regulatory Requirements		2013 Detections		
	MCLG	MCL	Min	Avg	Max
Arsenic (ppb) (2011) ^{1,2}	0	10	ND	1	3
Barium (ppm) (2011) ¹	2	2	0.23	0.26	0.28
Fluoride (ppm) (2011) ¹	4	4	0.2	0.3	0.4
Nitrate (ppm)	10	10	ND	0.01	0.05
Lead (ppb) (2012) ¹	0	AL = 90% below 15 ppb	90% below 4.09 ppb No sample above 15 ppb		
Copper (ppm) (2012) ¹	1.3	AL = 90% below 1.3 ppm	95% below 0.226 ppm No sample above 1.3 ppm		

Synthetic and Volatile Organic Contaminants

Toluene (ppb) (2011) ¹	1	1	ND	0.1	0.5
Xylenes (ppm) (2011) ¹	10	10	ND	0.001	0.003

Radiological Contaminants

Gross Alpha (pCi/L) (2011) ¹	0	15	ND	4.2	7.0
Gross Beta (pCi/L) (2011) ¹	0	50	4.2	5.4	6.6
Combined Radium (pCi/L) (2011) ¹	0	5	1.0	1.6	2.8

(1) Detected contaminants within the past five years - subject to reduced monitoring requirements.

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

Lead and Copper Monitoring Violation: 2012 - 2013

The Utility District #5 system (Kingwood PWS) failed to collect all required lead and copper samples scheduled in 2012 and 2013. This violation is for failure to meet the sampling schedule set by the Texas Commission on Environmental Quality (TCEQ) and is not related to the level of lead and copper detected in the water. Our records indicate that all lead and copper results for this water system have consistently met Federal and TCEQ standards for drinking water.

The Kingwood PWS is required to collect 30 samples during lead and copper sample events. Sample events have been on a triennial (3-year) schedule since 1999. During the event scheduled in 2012 only 20 of the 30 required samples were collected. The TCEQ issued a monitoring and reporting violation by entering the violation in their Drinking Water Watch database on the internet. The database was also updated to require annual lead and copper sampling starting 2013. Lead and copper samples were not collected for this PWS in 2013.

Kingwood PWS became aware of the TCEQ monitoring and reporting violation in January 2014. We will resolve this issue by collecting the required samples in 2014 during our sample period: June 1, 2014 - September 30, 2014. We expect the system to return to compliance as soon as the results are reported to TCEQ in 2014.

Stage 2 Disinfectant Byproducts

Locations shown on [system map](#)

Highest locational average for each contaminant is highlighted yellow						
DBP 2 Sample Location	Haloacetic Acids			Total Trihalomethanes		
	Min	Avg	Max	Min	Avg	Max
DBP2-01	ND			ND		
DBP2-02	1.4	1.6	1.9	ND	4.2	8.4
DBP2-03	ND			ND		
DBP2-04	ND			ND		

Unregulated Contaminants*

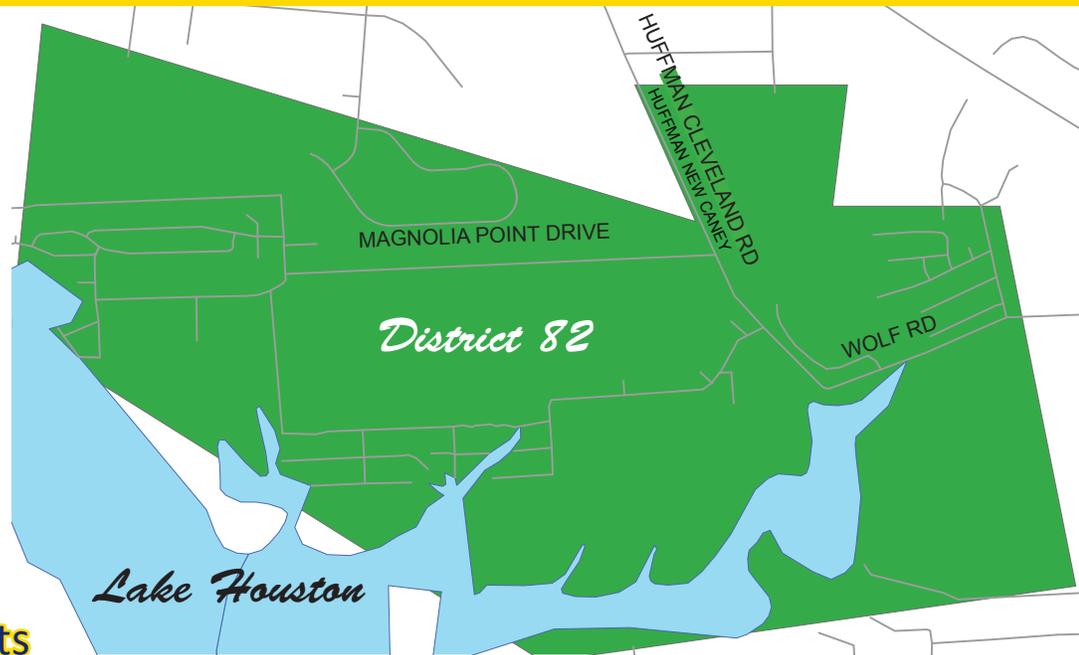
Results for the Third Unregulated Contaminant Monitoring Rule

Contaminant (units)	Min	Avg	Max
Hexachrome (ppb)	ND	0.1	0.8
Vanadium (ppb)	ND	0.4	2.3
Chromium (ppb)	1.1		
Molybdenum (ppb)	ND	2.45	3.9
Strontium (ppb)	ND	264	320

*Read about unregulated contaminants on [page 12](#).

District 82 produced an average of 50 thousand gallons of water per day in 2013. This system provides for approximately 550 people and relies solely on groundwater from the Evangeline aquifer through 2 wells located in the area.

SUPERIOR
PUBLIC WATER
SYSTEM
THE STATE OF TEXAS



District 82
2013 Sample Results

Disinfectant and Bacteriological Indicators

	Regulatory Requirements		2013 Detections	
	MRDLG	MRDL	Chlorine Levels	
Chlorine (Disinfectant)	< 4.0 ppm	4.0 ppm	Avg	Max
			1.3 ppm	1.8 ppm
Total Coliform	MCLG	MCL	Total Coliform Detections	
	0 detections	Presence of coliform bacteria in more than one sample per month.	1 positive sample, May 2013* 1 positive sample, July 2013*	



Inorganic Contaminants

Contaminant (units)	Regulatory Requirements		2013 Detections		
	MCLG	MCL	Min	Avg	Max
Barium (ppm) (2009) ¹	2	2		0.1	
Fluoride (ppm) (2012) ¹	4	4		0.1	
Nitrate (ppm)	10	10		0.2	
Lead (ppb) (2010) ¹	0	AL = 90% below 15 ppb	90% below 2.6 ppb - No sample above 15 ppb		
Copper (ppm) (2010) ¹	1.3	AL = 90% below 1.3 ppm	90% below 0.041 ppm - No sample above 1.3 ppm		

Volatile Organic Contaminants

Haloacetic Acids (ppb)	N/A	60	1.2	1.5	1.8
Total Trihalomethanes (ppb)	N/A	80	4.9	5.4	5.8

Radiological Contaminants

Gross Alpha (pCi/L) (2009) ¹	0	15	2.2		
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(1) Detected contaminants within the past five years - subject to reduced monitoring requirements.

* Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. When coliform is detected the system is required to follow-up with additional sampling to confirm the integrity of the water or determine if there is a problem. All follow-up samples indicated that the water was safe and free of coliform.



District 73 serves approximately 4,000 people, and provided 330 thousand gallons per day to customers, on average, in 2013. This system receives its water from 4 groundwater wells located throughout the area. These are deep wells with typical depths greater than 750 feet, producing water from the Evangeline and Chicot aquifers.

District 73 2013 Sample Results

Disinfectant and Bacteriological Indicators

	Regulatory Requirements		2013 Detections	
Chlorine (Disinfectant)	MRDLG	MRDL	Chlorine Levels	
	< 4.0 ppm	4.0 ppm	Avg	Max
			1.3 ppm	2.0 ppm
Total Coliform	MCLG	MCL	Total Coliform Detections	
	0 detections	Presence of coliform bacteria in more than one sample per month.	2 positive samples in Sep 2013 0 positive samples for the remainder of 2013	

Inorganic Contaminants

	Regulatory Requirements		2013 Detections		
Contaminant (units)	MCLG	MCL	Min	Avg	Max
Barium (ppm) (2011) ¹	2	2	0.23	0.26	0.29
Fluoride (ppm) (2011) ¹	4	4	0.21	0.22	0.22
Nitrate (ppm)	10	10	ND	0.02	0.03
Selenium (ppb) (2011) ¹	50	50	ND	3.5	7
Lead (ppb) (2012)	0	AL = 90% below 15 ppb	90% below 2.9 ppb No sample above 15 ppb		
Copper (ppm) (2012)	1.3	AL = 90% below 1.3 ppm	90% below 0.13 ppm No sample above 1.3 ppm		

Radiological Contaminants

Gross Alpha (pCi/L)	0	15	ND	4.2	7.0
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(1) Detected contaminants within the past five years - subject to reduced monitoring requirements.



Total Coliform MCL Violation

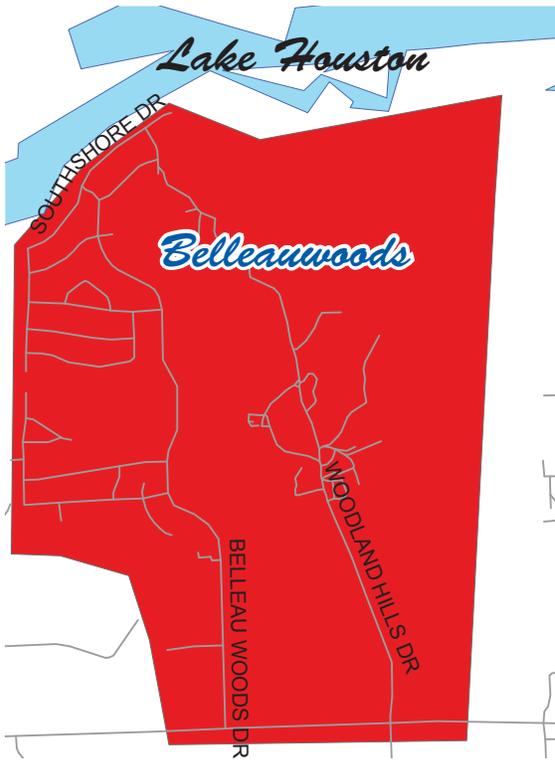
In September 2013 the District 73 system collected 2 routine water samples that contained coliform bacteria. When coliform is detected the system is required to follow-up with additional sampling to confirm the integrity of the water or determine if there is a problem. All follow-up samples indicated that the water is safe and free of coliform.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. This water system is required to submit a minimum of four routine water samples each month for bacteriological analysis. TCEQ regulations state that for systems analyzing fewer than 40 samples per month, no more than 1 sample per month may be positive for total coliform.

"It's truly special to live in a city in the world where you can drink water straight from the tap. I'm not sure everyone realizes that, and I am proud to be a part of the effort."

— Engineer, 6 years with the City of Houston





The Belleauwoods water system serves approximately 800 people and provided an average of 200 thousand gallons per day to customers in 2013. Source water for Belleauwoods includes purchased water from the City of Humble and groundwater from 2 wells located in the area. These are deep wells with typical depths greater than 750 feet, producing water from the Evangeline aquifer.

Belleauwoods 2013 Sample Results

Disinfectant and Bacteriological Indicators

	Regulatory Requirements		2013 Detections	
	MRDLG	MRDL	Chlorine Levels	
Chlorine (Disinfectant)	< 4.0 ppm	4.0 ppm	Avg	Max
			0.85 ppm	2.4 ppm
Total Coliform	MCLG	MCL	Total Coliform Detections	
	0 detections	Presence of coliform bacteria in more than one sample per month.	1 positive sample in Dec 2013*	

Inorganic Contaminants

Contaminant (units)	Regulatory Requirements		2013 Detections		
	MCLG	MCL	Min	Avg	Max
Barium (ppm) (2012) ¹	2	2	0.4		
Fluoride (ppm) (2011) ¹	4	4	0.3		
Nitrate (ppm)	10	10	0.02	0.07	0.11
Lead (ppb) (2009) ¹	0	AL = 90% below 15 ppb	90% below 1.3 ppb No sample above 15 ppb		
Copper (ppm) (2009) ¹	1.3	AL = 90% below 1.3 ppm	90% below 0.16 ppm No sample above 1.3 ppm		

Volatile Organic Contaminants

Ethylbenzene (ppb) (2009) ¹	700	700	0.6		
Xylenes (ppm) (2009) ¹	10	10	0.004		
Haloacetic Acids (ppb)	N/A	60	9.4	9.9	10.4
Total Trihalomethanes (ppb)	N/A	80	6.6	6.8	7

(1) Detected contaminants within the past five years - subject to reduced monitoring requirements.

* Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. When coliform is detected the system is required to follow-up with additional sampling to confirm the integrity of the water or determine if there is a problem. All follow-up samples indicated that the water was safe and free of coliform.



CONTAMINANT SOURCES

CONTAMINANT	SOURCES
Arsenic	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Asbestos	Erosion of natural deposits; corrosion of asbestos-cement water lines.
Atrazine	Runoff from herbicide used on row crops.
Barium	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Chlorine and Chloramines	Water additives used to control microbes.
Combined Radium	Erosion of natural deposits.
Combined Uranium	Erosion of natural deposits.
Copper	Corrosion of household plumbing systems; Erosion of natural deposits.
Ethylbenzene	Discharge from petroleum refineries.
Fluoride	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Gross Alpha	Erosion of natural deposits.
Gross Beta	Decay of natural and man-made deposits.

CONTAMINANT	SOURCES
Hexachlorocyclopentadiene (HEX)	Discharge from chemical factories manufacturing pesticides, flame retardants, resins, dyes, pharmaceuticals, plastics, etc.
Lead	Corrosion of household plumbing systems; Erosion of natural deposits.
Nitrate / Nitrate	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Selenium	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.
Simazine	Herbicide runoff.
Toluene	Discharge from petroleum, plastics, paint, and pharmaceutical manufacturing.
Total Haloacetic Acids (HAAs)	By-product of drinking water disinfection.
Total Trihalomethanes (TTHMs)	By-product of drinking water disinfection.
Total Coliform	Naturally present in the environment.
Turbidity	Soil runoff.
Xylenes	Discharge from petroleum factories; Discharge from chemical factories.

The City of Houston and its employees are very proud to deliver superior drinking water that meets or exceeds EPA limits to the citizens of Houston, 24 hours a day, 7 days a week. The EPA has set limits for drinking water quality based on scientific studies and calculated risks.

For more information regarding the EPA limits, please visit:

<http://water.epa.gov/lawsregs/rulesregs/sdwa/currentregulations.cfm>.

For more information on EPA calculated risks and scientific studies visit:

<http://water.epa.gov/scitech/drinkingwater/dws/ccl/index.cfm>.

Unregulated Contaminants

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. Any unregulated contaminants detected are reported in the tables inside this report. For additional information and data visit <http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr> or call the Safe Drinking Water Hotline at (800) 426-4791.

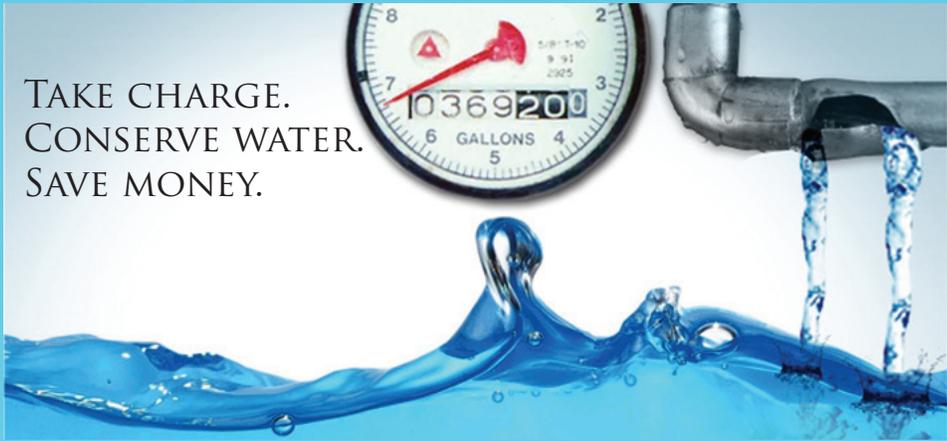
Special Information on Lead in Drinking Water:

Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. 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 Houston is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

"We provide drinking water 24 hours per day, 365 days of the year, to millions of people. Think about that. It's an outstanding feat!"

-Managing Engineer, 6 years with the City of Houston





TAKE CHARGE.
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These features and many others are available to help City of Houston customers manage their water usage and accounts:

Weekly bill projections
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WATER BUDGETING TOOLS

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To get started visit www.houstonwater.org or download the **myHoustonWater** app for iPhone and Android.

Public Participation Opportunities

Information on City Council meetings is available on the website for the Office of the City Secretary at:

www.houstontx.gov/citysec/index.html

To find out more about Drinking Water Operations Education & Outreach group go to:

www.publicworks.houstontx.gov/utilities/conservation.html

Past year's Water Quality Reports may be found online at:

www.publicworks.houstontx.gov/utilities/consumer-confidence.html

Definitions & Abbreviations

AL

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

LRAA - Locational Running Annual Average - The average of results taken at a specific monitoring location during the previous four calendar quarters

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. Since MCLGs do not consider limits of detection and available treatment technology, sometimes they are set at a level below MCLs which water systems cannot meet. MCLGs are non-enforceable public health goals.

MCL

Maximum Contaminant Level - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to maximum contaminant level goals as feasible using the best available treatment technology.

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.

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.

N/A - Not Applicable

ND - Not Detected

NTU - nephelometric turbidity units
(a measure of turbidity)

pCi/L - picocuries per liter
(a measure of radioactivity)

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

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

ppt - parts per trillion,
or nanograms per liter (ng/L)

TT

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



-Our Mission-

To plan, design, construct, operate and maintain Houston's critical public infrastructure systems and establish/enforce the City's building and development codes in a coordinated manner to provide drinking water, wastewater collection and treatment, stormwater drainage, and streets; and do so responsively, effectively, efficiently, and in an environmentally responsible fashion to serve our customers.



Contact Us

Questions or concerns about your water? *Contact 311.*

- Dial 311
- Visit www.houstontx.gov/311
- Download the 311 app for iPhone and Android



311 is Houston's non-emergency service center.

Customers may use 311 to notify us of any problems they may be experiencing and a water quality investigator will be dispatched within twenty-four hours to respond to and resolve the problem.

This Report is also available online at:

www.publicworks.houstontx.gov/wq2013