



# CITY OF HOUSTON

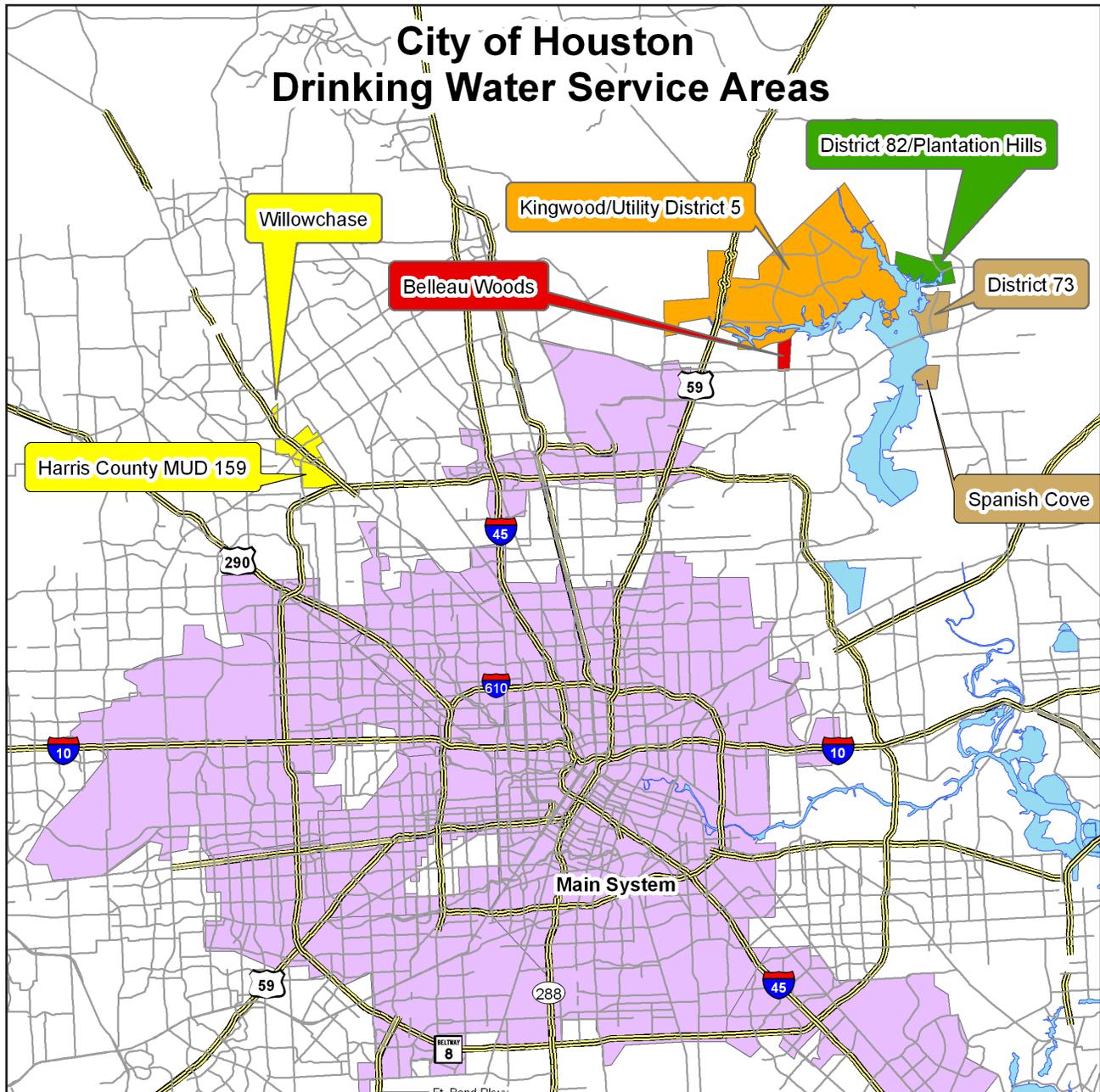
DEPARTMENT OF PUBLIC WORKS & ENGINEERING

## DRINKING WATER QUALITY REPORT

2011

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

**OUR DRINKING WATER MEETS OR EXCEEDS ALL FEDERAL (EPA) DRINKING WATER REQUIREMENTS**  
This report is a summary of the quality of the drinking water we provide our customers. The analysis was made by using the data from the most recent U.S. Environmental Protection Agency (EPA) required tests and is presented in the attached pages. We hope this information helps you become more knowledgeable about what's in your drinking water.



### YOUR DRINKING WATER

**D**rinking water is provided by the City of Houston to 8 community public water systems, which are shown on the map above. The Main system, which relies mostly on treated surface water, serves approximately 95 percent of the people that live within the City of Houston service areas. The remaining systems rely on ground water as their source.

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.

In 2011, Houston received 86 percent of its treated drinking water from its surface water treatment plants. Surface water comes from the San Jacinto River through Lake Conroe and Lake Houston, and the Trinity River, through Lake Livingston. The remaining 14 percent came from groundwater wells. These are deep wells with typical depths greater than 750 feet, producing water from the Evangeline and Chicot Aquifers, and are not vulnerable to surface contamination. There is enough water in our distribution system at any given time to fill the Astrodome two and one-half times. Visit our web site for more information: [www.publicworks.houstontx.gov/utilities/drinkingwater.htm](http://www.publicworks.houstontx.gov/utilities/drinkingwater.htm).

**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.

# ABOUT THIS REPORT

This report lists all of the federally regulated or monitored contaminants which have been found in your drinking water. The U.S. EPA requires water systems to test for up to 97 contaminants. Most sampling is conducted at each source water entry point into the system. The actual water received by a consumer may be a blend from different sources, depending on the location.

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).

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.

MAIN SYSTEM (PWS ID#1010013)					
REGULATED CONTAMINANTS	MCLG	MCL	MIN	AVG	MAX
Arsenic (ppb)	0	10	ND	0.2	5.2 <sup>(1)</sup>
Barium (ppm)	2	2	0.1	0.2	0.4
Fluoride (ppm)	4	4	0.1	0.4	0.7
Nitrate as N (ppm)	10	10	ND	0.2	0.7
Nitrite as N (ppm)	1	1	ND	0.003	0.02
Selenium (ppb)	50	50	ND	2	10
Lead (ppb) (2009) <sup>(2)</sup>	0	Action Level 90% < 15ppb	90% below 3.4 ppb One sample above 15ppb at 17 ppb		
Copper (ppm) (2009) <sup>(2)</sup>	1.3	Action Level 90% < 1.3ppm	90% below 0.09 ppm No samples above 1.3 ppm		
Gross Alpha (pCi/L)	0	15	ND	4.2	13.2
Gross Beta (pCi/L)	0	50	ND	4.2	7.8
Combined Radium (pCi/L)	0	5	ND	1.5	3.6
Combined Uranium (ppb)	0	30	15.9		
Atrazine (ppb)	3	3	ND	0.2	0.7
Simazine (ppb)	4	4	ND	0.1	0.2
Xylenes (ppm)	10	10	ND	0.1	1.1
Total Haloacetic Acids (HAAs) (ppb)	N/A	60	ND	9	18
Total Trihalomethanes (TTHMs) (ppb)	N/A	80	ND	17	31
Residual Total Chlorine Disinfectant Levels (ppm)	MRDLG 4ppm	MRDL 4ppm	0.5	2.4	3.8
Total Coliform (presence)	0	*(3)	Highest Monthly Percentage of Positive Samples: 0.9%		
E. Coli (presence)	0	*(4)	Number of E.Coli Positive Samples Found in 2011: 0		
Turbidity (NTU)	N/A	TT <sup>(5)</sup>	100% of samples < 0.3 NTU Highest single value: 0.28 NTU		
UNREGULATED CONTAMINANTS					
Chloroform (ppb)		N/A	ND	5.9	9.2
Bromodichloromethane (ppb)		N/A	ND	6.1	10.0
Bromoform (ppb)		N/A	ND	0.8	3.3
Dibromochloromethane (ppb)		N/A	ND	3.4	5.5
Dichloroacetic acid (ppb)		N/A	ND	5.7	10.0
Trichloroacetic acid (ppb)		N/A	ND	1.7	4.2

(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) Presence of coliform bacteria in more than 5% of monthly samples.  
(4) A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or *E. coli* positive.  
(5) 95% of samples tested each month less than or equal to 0.3 NTU.

KINGWOOD/UTILITY DISTRICT # 5 (PWS ID#1010348)					
REGULATED CONTAMINANTS	MCLG	MCL	MIN	AVG	MAX
Arsenic (ppb)	0	10	ND	1	3
Barium (ppm)	2	2	0.23	0.26	0.28
Fluoride (ppm)	4	4	0.2	0.3	0.4
Nitrate as N (ppm)	10	10	ND	0.01	0.05
Lead (ppb) (2009) <sup>(1)</sup>	0	Action Level 90% < 15ppb	90% below 1.9 ppb No samples above 15 ppb		
Copper (ppm) (2009) <sup>(1)</sup>	1.3	Action Level 90% < 1.3ppm	90% below 0.26 ppm No samples above 1.3 ppm		
Gross Alpha (pCi/L)	0	15	ND	4.2	7.0
Gross Beta (pCi/L)	0	50	4.2	5.4	6.6
Combined Radium (pCi/L)	0	5	1.0	1.6	2.8
Di(2-ethylhexyl) phthalate (DEHP) (ppb) (2009) <sup>(1)</sup>	0	6	ND	0.6	2.8
Toluene (ppb)	0	6	ND	0.1	0.5
Xylenes (ppb)	10	10	ND	0.6	3.2
Total Haloacetic Acids (HAA5) (ppb)	N/A	60	ND		
Total Trihalomethanes (TTHMs) (ppb)	N/A	80	ND		
Residual Free Chlorine Disinfectant Levels (ppm)	MRDLG 4ppm	MRDL 4ppm	1.0	1.4	1.8
Total Coliform (presence)	0	*(2)	Number of Positive Samples Found in 2011: 0		

(1) Detected contaminants within the past five years subject to reduced monitoring requirements.  
(2) Presence of coliform bacteria in 5% or more of the monthly samples.

## DEAD ENDS = NEW HOPE FOR HOUSTON TREES

In an effort to conserve water and preserve Houston trees during the summer of 2011, city workers used approximately 5 million gallons of water produced from flushing dead end water lines to water our Houston area parks.



photo by Julie Huerta

### DEFINITIONS

**Maximum contaminant level goal (MCLG)** - 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.

**Maximum contaminant level (MCL)** - 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.

**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 contaminants.

**Maximum residual disinfectant level (MRDL)** - 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.

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

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

DISTRICT 82/PLANTATION HILLS (PWS ID#1011593)					
REGULATED CONTAMINANTS	MCLG	MCL	MIN	AVG	MAX
Barium (ppm) (2009) <sup>(1)</sup>	2	2	0.1		
Fluoride (ppm) (2009) <sup>(1)</sup>	4	4	0.1		
Nitrate as N (ppm)	10	10	0.16		
Lead (ppb) (2010) <sup>(1)</sup>	0	Action Level 90% < 15ppb	90% below 2.6 ppb No sample above 15 ppb		
Copper (ppm) (2010) <sup>(1)</sup>	1.3	Action Level 90% < 1.3ppm	90% below 0.041 ppm No samples above 1.3 ppm		
Gross Alpha (pCi/L) (2009) <sup>(1)</sup>	0	15	2.2		
Total Haloacetic Acids (HAAs) (ppb) (2010) <sup>(1)</sup>	N/A	60	2.0	3.0	3.9
Total Trihalomethanes (TTHMs) (ppb) (2010) <sup>(1)</sup>	N/A	80	6.8	8.0	9.1
Residual Free Chlorine Disinfectant Levels (ppm)	MRDLG 4ppm	MRDL 4ppm	0.5	1.2	2.0
Total Coliform (presence)	0	* <sup>(2)</sup>	Number of Positive Samples Found in 2011: 0		
UNREGULATED CONTAMINANTS					
Chloroform (ppb) (2009) <sup>(1)</sup>	N/A		1.03		

(1) Detected contaminants within the past five years subject to reduced monitoring requirements.  
(2) Presence of coliform bacteria in more than one monthly sample.

BELLEAU WOODS (PWS ID#1011594)					
Note: Source water includes on site groundwater and purchased water from the City of Humble					
REGULATED CONTAMINANTS	MCLG	MCL	MIN	AVG	MAX
Arsenic (ppb)	0	10	3.9	5.9	7.9 <sup>(3)</sup>
Barium (ppm)	2	2	0.38	0.41	0.43
Fluoride (ppm)	4	4	0.15	0.26	0.49
Selenium (ppb)	50	50	ND	2.4	4.8
Nitrate as N (ppm)	10	10	0.01	0.12	0.30
Nitrite as N (ppm)	1	1	0.02		
Lead (ppb) (2009) <sup>(1)</sup>	0	Action Level 90% < 15 ppb	90% below 1.3 ppb No sample above 15 ppb		
Copper (ppm) (2009) <sup>(1)</sup>	1.3	Action Level 90% < 1.3 ppm	90% below 0.16 ppm No samples above 1.3 ppm		
Ethylbenzene (ppb) (2009) <sup>(1)</sup>	700	700	0.6		
Xylenes (ppm) (2009) <sup>(1)</sup>	10	10	.004		
Total Haloacetic Acids (HAAs) (ppb)	N/A	60	ND	5.25	8.7
Total Trihalomethanes (TTHMs) (ppb)	N/A	80	ND	6.04	11.9
Residual Free Chlorine Disinfectant Levels (ppm)	MRDLG 4ppm	MRDL 4ppm	0.2	0.9	3.7
Total Coliform (presence)	0	* <sup>(2)</sup>	Number of Positive Samples Found in 2011: 0		
UNREGULATED CONTAMINANTS					
Chloroform (ppb)	N/A		ND	2.6	5.9
Bromodichloromethane (ppb)	N/A		ND	1.4	3.5
Dibromochloromethane (ppb)	N/A		ND	0.2	1.2

(1) Detected contaminants within the past five years subject to reduced monitoring requirements.  
(2) Presence of coliform bacteria in more than one monthly sample.  
(3) See footnote (1) in Main System Table.

HCMUD - 159 (PWS ID#1011782) AND WILLOWCHASE MUD (PWS ID#1011902)					
Note: These systems are physically interconnected.					
REGULATED CONTAMINANTS	MCLG	MCL	MIN	AVG	MAX
Arsenic (ppb)	0	10	2.5	2.55	2.6
Barium (ppm)	2	2	0.24	0.27	0.30
Fluoride (ppm)	4	4	0.19	0.20	0.21
Nitrate (ppm)	10	10	0.18	0.20	0.21
Selenium (ppb)	50	50	3.2	4.5	5.8
Lead (ppb)	0	Action Level 90% < 15ppb	90% below 1.7 ppb No sample above 15 ppb		
Copper (ppm)	1.3	Action Level 90% < 1.3ppm	90% below 0.42 ppm No samples above 1.3 ppm		
Gross Alpha (pCi/L)	0	15	4.1	4.7	5.3
Gross Beta (pCi/L)	0	50	ND	2.6	5.1
Residual Free Chlorine Disinfectant Levels (ppm)	MRDLG 4ppm	MRDL 4ppm	0.3	1.3	2.0
Total Coliform (presence) <sup>(2)</sup>	0	* <sup>(1)</sup>	Number of Positive Samples Found in 2011: 0		

(1) Presence of coliform bacteria in more than one monthly sample.  
(2) In August and September 2011, the City failed to collect the required number of monthly bacteriological samples for Willowchase and HCMUD-159. In Willowchase 8 out of 10 required samples were taken, and in HCMUD-159 3 out of 4 required samples were taken. None of the samples collected returned positive for coliform; however failure to collect all required bacteriological samples is a violation of the monitoring requirements.

DISTRICT 73 (PWS ID#1011585) AND SPANISH COVE (PWS ID#1011590)					
Note: These systems are physically interconnected.					
REGULATED CONTAMINANTS	MCLG	MCL	MIN	AVG	MAX
Barium (ppm)	2	2	0.23	0.26	0.29
Fluoride (ppm)	4	4	0.21	0.215	0.22
Nitrate as N (ppm)	10	10	ND	0.02	0.03
Selenium (ppb)	10	10	ND	3.5	7
Lead (ppb)	0	Action Level 90% < 15ppb	90% below 2.9 ppb No samples above 15 ppb		
Copper (ppm)	1.3	Action Level 90% < 1.3ppm	90% below 0.13 ppm No sample above 1.3 ppm		
Gross Alpha (pCi/L)	0	15	2.3	3.1	3.8
Gross Beta (pCi/L)	0	50	ND		
Total Trihalomethanes (TTHMs) (ppb) (2010) <sup>(1)</sup>	N/A	80	ND	2.3	6.9
Residual Free Chlorine Disinfectant Levels (ppm)	MRDLG 4ppm	MRDL 4ppm	0.5	1.3	1.9
Total Coliform (presence)	0	* <sup>(2)</sup>	Number of Positive Samples Found in 2011: 0		

(1) Detected contaminants within the past five years subject to reduced monitoring requirements.  
(2) Presence of coliform bacteria in more than one monthly sample.

### ABBREVIATIONS

- **NTU**-nephelometric turbidity units (a measure of turbidity)
- **pCi/L**-picocuries per liter (a measure of radioactivity)
- **ppb**-parts per billion, or micrograms per liter (µg/L)
- **ppm**-parts per million, or milligrams per liter (mg/L)
- **ppt**-parts per trillion, or nanograms per liter (ng/L)
- **N/A**-Not Applicable
- **ND**-Not Detected

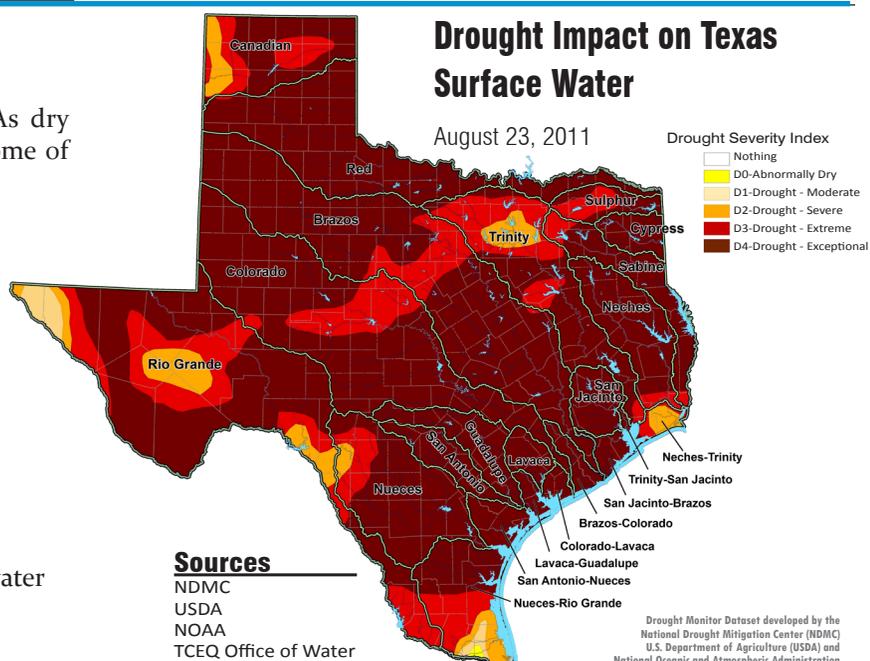
## A TIME TO CONSERVE

2011 was a record breaking drought year for Texas. As dry conditions extend into 2012, you can help by practicing some of these tips to reduce water usage in your home:

- Collect rainwater for watering your plants
- Turn water off while brushing your teeth
- Keep showers under five minutes
- Wash only full loads of dishes or clothes
- Replace older model showerheads and faucets with new low-flow models
- Fix faucet leaks, which can waste up to 3,000 gallons of water a year

You can also find updated information on City of Houston water production and reservoir levels at:

<http://dwsn.publicworks.houstontx.gov/watergauges/>



## CONTAMINANT SOURCES

CONTAMINANT	SOURCES	CONTAMINANT	SOURCES
Arsenic	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.	Gross Alpha	Erosion of natural deposits.
Atrazine	Runoff from herbicide used on row crops.	Gross Beta	Decay of natural and man-made deposits.
Barium	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.	Lead	Corrosion of household plumbing systems; Erosion of natural deposits.
Chlorine and Chloramines	Water additives used to control microbes.	Nitrate / Nitrate	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Chromium	Discharge from steel and pulp mills; Erosion of natural deposits.	Selenium	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.
Combined Radium	Erosion of natural deposits.	Simazine	Herbicide runoff.
Combined Uranium	Erosion of natural deposits.	Toluene	Discharge from petroleum, plastics, paint, and pharmaceutical manufacturing.
Copper	Corrosion of household plumbing systems; Erosion of natural deposits.	Total Halobacetic Acids (HAAs)	By-product of drinking water disinfection.
Di(2-ethylhexyl) phthalate (DEHP)	Discharge from rubber and chemical factories.	Total Trihalomethanes (TTHMs)	By-product of drinking water disinfection.
E. Coli	Human and animal fecal waste.	Total Coliform	Naturally present in the environment.
Ethylbenzene	Discharge from petroleum refineries.	Turbidity	Soil runoff.
Fluoride	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.	Xylenes	Discharge from petroleum factories; Discharge from chemical factories.

Contaminants may be found in drinking water that may cause taste, color, or odor problems. These types of problems are not necessarily causes for health concerns. For more information on taste, odor, or color of drinking water, please contact the system's business office.

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 please 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 <http://www.epa.gov/safewater/lead>.

Cover Photo by Victor Nguyen • Lake Houston • March 2012

## HOUSTON'S SUPERIOR DRINKING WATER!

The City of Houston has maintained a SUPERIOR water rating from TCEQ for over 10 years. In addition, the City also VOLUNTARILY participates in the Partnership for Safe Water Program. This program's goal is to provide a new measure of safety to millions of 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. In addition, this program has created a new category, the Distribution System Optimization Program. The City of Houston is a charter member for its 7,000+ miles of water lines that distribute superior drinking water to your homes each day.



The EPA has set limits for drinking water quality based on scientific studies and calculated risks. 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. 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, please visit: [http://water.epa.gov/action/advisories/drinking/drinking\\_index.cfm](http://water.epa.gov/action/advisories/drinking/drinking_index.cfm).

### Contact Us

The City of Houston operates a non-emergency help line - 311. Customers can dial this number 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. Please dial 311 if you have any questions or concerns regarding your drinking water.

### Public Participation Opportunities

Information on City Council meetings is available on the website for the Office of the City Secretary at <http://www.houstontx.gov/citysec/index.html>. To find out more about Drinking Water Operations Education & Outreach group go to <http://www.publicworks.houstontx.gov/utilities/conservation.html>.

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DEPARTMENT OF  
PUBLIC WORKS & ENGINEERING

[WWW.HOUSTONTX.GOV](http://WWW.HOUSTONTX.GOV)

