



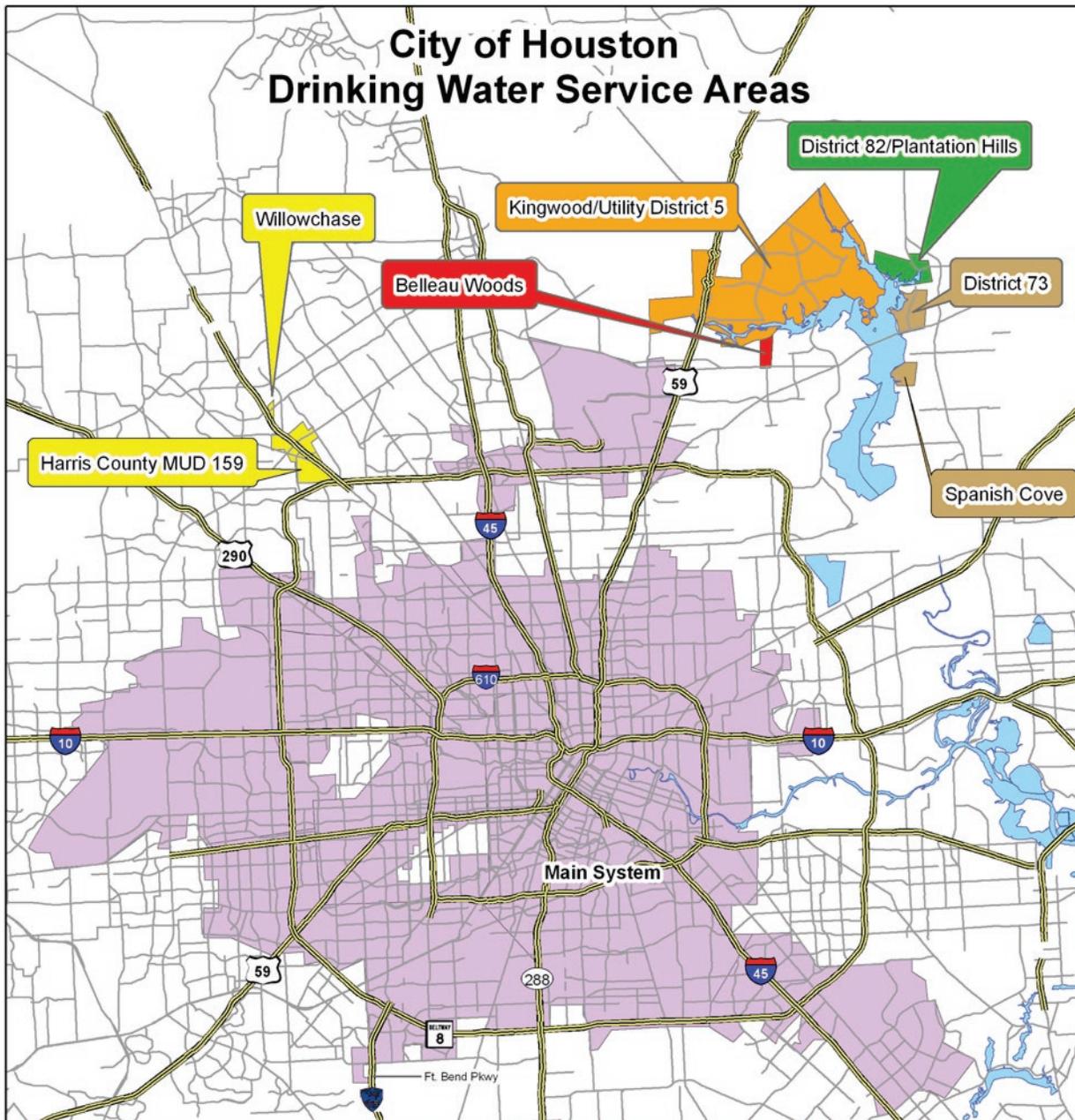
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS & ENGINEERING DRINKING WATER QUALITY REPORT 2010

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!

Drinking 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 groundwater 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 or through the ground, it dissolves naturally-occurring minerals, and in some cases, radioactive material, and can 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 2010, Houston received 90 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 10 percent comes 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.

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	2.6	4.3	7.3 ⁽¹⁾
Barium (ppm)	2	2	0.1	0.2	0.4
Fluoride (ppm)	4	4	0.2	0.5	0.8
Nitrate as N (ppm)	10	10	ND	0.18	0.72
Selenium (ppb)	50	50	ND	5.0	10.0
Lead (ppb) (2009) ⁽²⁾	0	AL = 90% below 15 ppb	90% below 3.4 ppb One sample above 15 ppb at 17 ppb		
Copper (ppm) (2009) ⁽²⁾	1.3	AL = 90% below 1.3 ppm	90% below 0.09 ppm No samples above 1.3 ppm		
Gross Alpha (pCi/L) (2009) ⁽²⁾	0	15	ND	5.6	16.9 ⁽³⁾
Gross Beta (pCi/L) (2009) ⁽²⁾	0	50	ND	4	10
Combined Radium (pCi/L) (2009) ⁽²⁾	0	5	ND	1.0	4.6
Combined Uranium (ppb) (2009) ⁽²⁾	0	30	3.2		
Atrazine (ppb)	3	3	ND	0.25	1.4
Simazine (ppb)	4	4	ND	0.09	0.20
Total Haloacetic Acids (HAAs) (ppb)	N/A	60	ND	12.2	25
Total Trihalomethanes (TTHMs) (ppb)	N/A	80	ND	16.9	35.9
Residual Total Chlorine Disinfectant Levels (ppm)	MRDLG =4	MRDL =4	0.1	2.7	3.9
Total Coliform (presence)	0	* (4)	Highest Monthly % of Positive Samples: 0.8%		
E. Coli (presence)	0	* (5)	One E. Coli positive sample. Repeat Sample was negative for E. Coli and total coliform.		
Turbidity (NTU)	N/A	TT ⁽⁶⁾	Lowest Monthly % Meeting Limits: 100% Highest Single Value: 0.27 NTU		

UNREGULATED CONTAMINANTS					
1,2,3-Trichloropropane (ppb)		N/A	ND	0.02	0.11
Chloroform (ppb)		N/A	ND	11	17
Bromodichloromethane (ppb)		N/A	ND	6.5	11
Dibromochloromethane (ppb)		N/A	ND	2.6	8.7
Bromoform (ppb)		N/A	ND	0.71	6.3
n-Nitrosodimethylamine (NDMA) (ppb)		N/A	ND	0.0077	0.0433

(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) The groundwater plant and wells - located near the intersection of Beltway 8 and Fort Bend Pkwy - from which the sample was collected have been determined to be surplus to the system requirements and are no longer in operation or operable. Although the maximum level reported is above the MCL, the compliance with the MCL is based on a quarterly average. Quarterly sampling is allowed because according to the U.S. EPA, gross alpha is a contaminant with potential chronic health effects. Consuming 8 glasses of water per day above the MCL of 15pCi/L for 70 years may result in a cancer risk probability range of 1 in 10,000 to 1 in 1,000,000. Additionally, the area previously served by this plant was provided groundwater only 30% of the time. The other 70% of the time, the area was provided surface water. Gross alpha has not been detected in water that comes from a surface water source.

(4) Presence of coliform bacteria in more than 5% of monthly samples.

(5) A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive.

(6) 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) (2008) ⁽¹⁾	0	10	ND	< 2	3
Barium (ppm) (2008) ⁽¹⁾	2	2	0.3	0.3	0.3
Fluoride (ppm) (2008) ⁽¹⁾	4	4	0.1	0.8	1.2
Nitrate as N (ppm)	10	10	ND	0.01	0.05
Selenium (ppb) (2008) ⁽¹⁾	50	50	ND	< 1	3
Lead (ppb) (2009) ⁽¹⁾	0	AL=90% below 15 ppb	90% below 1.9 ppb No samples above 15 ppb		
Copper (ppm) (2009) ⁽¹⁾	1.3	AL=90% below 1.3 ppm	90% below 0.26 ppm No samples above 1.3 ppm		
Gross Alpha (pCi/L) (2005) ⁽¹⁾	0	15	ND	2.9	5.0
Gross Beta (pCi/L) (2005) ⁽¹⁾	0	50	ND	< 4	7.1
Combined Radium (pCi/L) (2005) ⁽¹⁾	0	5	ND	< 1	1.1
Di(2-ethylhexyl) phthalate (DEHP) (ppb) (2009) ⁽¹⁾	0	6	ND	0.6	2.8
Total Haloacetic Acids (HAA5) (ppb) (2009) ⁽¹⁾	N/A	60	2.3		
Total Trihalomethanes (TTHMs) (ppb) (2009) ⁽¹⁾	N/A	80	6.2		
Residual Free Chlorine Disinfectant Levels (ppm)	MRDLG =4	MRDL =4	1.1	1.3	1.8
Total Coliform (presence) ⁽²⁾	0	* ⁽³⁾	Highest Monthly % of Positive Samples: 4.7%		

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

(2) In November, the City's contract operator failed to collect, within the required time frame, the required number of triggered source bacteriological samples. Based on the sampling that was taken timely and as follow-up, the City does not believe there is or ever was any public health concern to the consumers of this water system as a result of this monitoring and reporting violation.

(3) Presence of coliform bacteria in 5% or more of the monthly samples.

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 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) (2008) ⁽¹⁾	2	2	0.26		
Fluoride (ppm) (2008) ⁽¹⁾	4	4	0.12	0.13	0.13
Nitrate (ppm)	10	10	ND	0.02	0.03
Lead (ppb) ⁽¹⁾	0	AL=90% below 15 ppb	90% below 0.78 ppb No samples above 15 ppb		
Copper (ppm) ⁽¹⁾	1.3	AL = 90% below 1.3 ppm	90% below 0.16 ppm No sample above 1.3 ppm		
Gross Alpha (pCi/L) (2008) ⁽¹⁾	0	15	4.5	5.3	6.0
Gross Beta (pCi/L) (2008) ⁽¹⁾	0	50	4.1	4.5	4.9
Total Trihalomethanes (TTHMs) (ppb)	N/A	80	ND	2.3	6.9
Residual Free Chlorine Disinfectant Levels (ppm)	MRDLG =4	MRDL =4	0.4	1.1	1.8
Total Coliform (presence)	0	*(2)	Highest Monthly # of Positive Samples: 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.

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
Barium (ppm) (2009) ⁽¹⁾	2	2	0.4		
Nitrate (ppm)	10	10	ND	0.04	0.13
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 samples above 1.3 ppm		
Ethylbenzene (ppb) (2009) ⁽¹⁾	700	700	0.6		
Xylenes (ppm) (2009) ⁽¹⁾	10	10	0.0035		
Total Haloacetic Acids HAAs (ppb)	N/A	60	ND	0.6	1.1
Total Trihalomethanes (TTHMs) (ppb)	N/A	80	6.7	7.3	7.8
Residual Free Chlorine Disinfectant Levels (ppm)	MRDLG =4	MRDL =4	0.2	1.3	1.9
Total Coliform (presence)	0	*(2)	Highest Monthly # of Positive Samples: 1		

UNREGULATED CONTAMINANTS

Chloroform (ppb) (2009) ⁽¹⁾	N/A	6.9
Bromodichloromethane (ppb) (2009) ⁽¹⁾	N/A	10
Dibromochloromethane (ppb) (2009) ⁽¹⁾	N/A	13
Bromoform (ppb) (2009) ⁽¹⁾	N/A	8.6

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

DISTRICT 82/PLANTATION HILLS (PWS ID#1011593)					
REGULATED CONTAMINANTS	MCLG	MCL	MIN	AVG	MAX
Barium (ppm) (2009) ⁽¹⁾	2	2	0.1		
Fluoride (ppm) (2009) ⁽¹⁾	4	4	0.1		
Nitrate (ppm)	10	10	0.16		
Lead (ppb)	0	AL = 90% below 15 ppb	90% below 2.6 ppb No sample above 15 ppb		
Copper (ppm)	1.3	AL=90% below 1.3 ppm	90% below 0.041 ppm No samples above 1.3 ppm		
Gross Alpha (pCi/L) (2009) ⁽¹⁾	0	15	2.2		
Total Haloacetic Acids (HAAs) (ppb)	N/A	60	2.0	3.0	3.9
Total Trihalomethanes (TTHMs) (ppb)	N/A	80	6.8	8.0	9.1
Residual Free Chlorine Disinfectant Levels (ppm)	MRDLG =4	MRDL =4	0.4	1.1	1.8
Total Coliform	0	*(2)	Highest Monthly # of Positive Samples: 0		

UNREGULATED CONTAMINANTS

Chloroform (ppb) (2009) ⁽¹⁾	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.

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) (2009) ⁽¹⁾	0	10	2.2	2.3	2.4
Barium (ppm) (2009) ⁽¹⁾	2	2	0.23	0.24	0.24
Chromium (ppb) (2009) ⁽¹⁾	100	100	ND	1	2
Fluoride (ppm) (2009) ⁽¹⁾	4	4	0.1	0.1	0.2
Nitrate (ppm)	10	10	0.19	0.21	0.22
Selenium (ppb) (2009) ⁽¹⁾	50	50	ND	1.7	3.4
Lead (ppb) (2009) ⁽¹⁾	0	AL = 90% below 15 ppb	90% below 2.1 ppb No sample above 15 ppb		
Copper (ppm) (2009) ⁽¹⁾	1.3	AL=90% below 1.3 ppm	90% below 0.22 ppm No samples above 1.3 ppm		
Gross Alpha (pCi/L) (2008-09) ⁽¹⁾	0	15	3.2	4.5	5.8
Gross Beta (pCi/L) (2008 - 2009) ⁽¹⁾	0	50	ND	1.0	4.1
Combined Radium (pCi/L) (2008 - 2009) ⁽¹⁾	0	5	ND	0.6	1.1
Residual Free Chlorine Disinfectant Levels (ppm)	MRDLG =4	MRDL =4	0.5	1.3	1.8
Total Coliform (presence)	0	*(2)	Highest Monthly # of Positive Samples: 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)
 - **N/A**-Not Applicable
 - **ND**-Not Detected

waterworks

EDUCATION CENTER

Promoting Water Education,
Conservation & Stewardship

Located near the shores of Lake Houston at the City of Houston's Northeast Water Purification Plant, WaterWorks Education Center is a one-of-a-kind regional water destination whose mission is to promote water education, conservation and stewardship. The center offers visitors an innovative environment for creative learning with interactive exhibits, demonstrations and tours. A project of the City of Houston Drinking Water Operations and opened in October 2010, the WaterWorks has hosted numerous school field trips and tours. Field trips and tours are by reservation only. Please call 832-395-3791 or visit www.houstonwaterworks.org for more information.



2010 Drinking Water Quality Report

CITY OF HOUSTON
DEPARTMENT OF
PUBLIC WORKS & ENGINEERING

WWW.HOUSTONTX.GOV

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.

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>.

CONTAMINANT SOURCES

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

Secondary Constituents

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

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

Cover photo by Victor Nguyen. Education Center photo by Jerrel Geisler.

