

# Dear Valued Water Customers

In over 100 years of service, the City of Corpus Christi Water Department has always strived for excellence in drinking water. We are mindful of our responsibility to provide you with a safe product at all times. Our committed staff has sought to delve deeper into our level of water sampling and monitoring. We are monitoring our water quality at different points in the water distribution system to ensure that a minimum of 1.0 mg/l or 1 part per million (ppm) total residual chlorine is detected. The Texas Commission on Environmental Quality (TCEQ) requires total residual chlorine value in drinking water to be no less than 0.5 ppm.

The newly created Water Quality Section manages the water line and fire hydrant flushing program to clean out any sediment that collects in water mains. Water lines located at dead-end lines and cul-de-sacs are flushed to maintain water quality at its optimal level.

## Where Does Our Drinking Water Come From?

The City's water is obtained from a combination of surface water sources. The Atascosa River and Nueces River supply Lake Corpus Christi, while the Frio River supplies Choke Canyon Reservoir. Water from Lake Texana is transported through the 101 mile Mary Rhodes Pipeline. Drinking water is produced at the O. N. Stevens Water Treatment Plant. A Source Water Susceptibility Assessment of our drinking water sources is currently being updated by the Texas Commission on Environmental Quality and will be provided this year. The report describes the susceptibility and types of constituents that may come in contact with our supply water source based on human activities and natural conditions. The information contained in the assessment will allow the City to focus on source water protection strategies.

The sources of drinking water, whether it is tap or bottled water, comes from rivers, lakes, streams, ponds, reservoirs, springs or wells. As water travels over the surface of the land, it dissolves naturally occurring minerals and in some cases, radioactive material, and picks up substances resulting from the presence of animals or from human or industrial activity. Contaminants that may be present in a water source before treatment include microbes, inorganic contaminants, pesticides, radioactive contaminants and organic chemical contaminants. For more information on source water assessments and protection efforts at our system, please call 361-826-1879.

## Cryptosporidium Monitoring Information

Cryptosporidium is a microbial pathogen that may be found in water contaminated by feces. Although filtration removes Cryptosporidium, it cannot guarantee 100 percent removal nor can the testing methods determine if the organisms are alive and capable of causing cryptosporidiosis, an abdominal infection with nausea, diarrhea and abdominal cramps that may occur after ingestion of contaminated water.



### A SPECIAL NOTICE FOR THE ELDERLY, INFANTS, CANCER PATIENTS, PEOPLE WITH HIV/AIDS AND OTHER IMMUNE SYSTEM DISORDERS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The EPA/Center for Disease Control and Prevention (CDC) 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.

### 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline at 800-426-4791.

The City of Corpus Christi conducted cryptosporidium (and Giardia) monitoring from January 2005 to December 2006. This was conducted under Long Term 2 Enhanced Surface Water Treatment (LT2) Rule so that the data could be 'grandfathered'. In addition, from October 2006 to December 2006, Nueces River and Lake Texana raw water were tested for *E.coli*. The results of this monitoring is shown below.

Oct 2005, Dec 2005 and Jan 2006 - Cryptosporidium  
1.0 count / 10 L Sample

Source Water	Date of Sample	<i>E.coli</i> (MPN/100 mL)
Nueces Raw	10/10/06	10
Lake Texana	10/10/06	<10
Nueces Raw	11/7/06	<10
Lake Texana	11/7/06	40
Nueces Raw	12/5/06	75
Lake Texana	12/5/06	<10

## KEY TERMS

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

**MPN - Most Probable Number**

**MCL-Maximum Contaminant Level.** The highest level of a contamination allowed in drinking water. MCLs are set as close to the MCLG 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.

**MRDL- Maximum Residual Disinfectant Level.** The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants. The limit is the running annual average.

**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.

**mrem/year - millirems per year.** A measurement of radiation absorbed in the body.

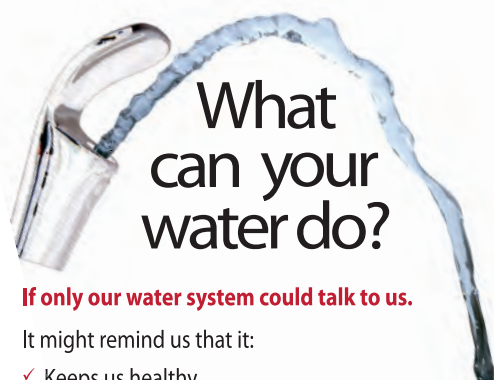
**NTU-Nephelometric Turbidity Units.** A measure of turbidity in water.

**pCi/L - pico-curies per liter.** A measure of radioactivity.

**ppb - parts per billion.** One part per billion is equal to one packet of artificial sweetener sprinkled into 250,000 gallons of iced tea.

**ppm - parts per million.** One part per million is equal to one packet of artificial sweetener sprinkled into 250 gallons of iced tea.

**TT - Treatment Technique.** A required process intended to reduce the level of a contaminant in drinking water. Turbidity. A measure of clarity of drinking water. The lower the turbidity, the better the taste.



## What can your water do?

### If only our water system could talk to us.

It might remind us that it:

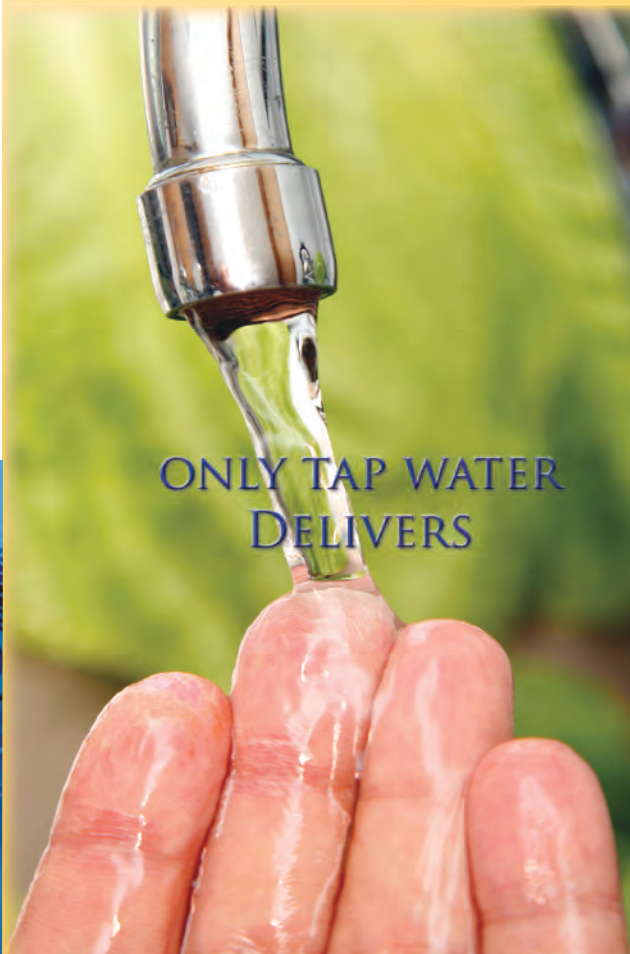
- ✓ Keeps us healthy,
- ✓ fights fires,
- ✓ supports our economy,
- ✓ and provides us with the high quality of life we enjoy

### UPCOMING PUBLIC PARTICIPATION OPPORTUNITY

6 p.m. | Thursday, June 26, 2009  
Water Utilities Conference Room  
2726 Holly Road Corpus Christi, TX



Water issues are also discussed at City Council meetings, usually held on every Tuesday, except for the first Tuesday of the month. Call (361) 880-3105 for exact date and meeting times or check the website at [www.cctexas.com](http://www.cctexas.com)



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YEARS  
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## ANNUAL DRINKING WATER QUALITY REPORT 2007

Este reporte incluye información sobre el agua potable. Si tiene preguntas o comentarios sobre éste informe en español, favor de llamar al 361.826.1879 para hablar con una persona bilingüe en español.



# 2007 Annual Drinking Water Quality Report

City of Corpus Christi, Texas

Our drinking water is regulated by the Texas Commission on Environmental Quality (TCEQ) and they have determined that certain water quality issues existed during 2007 which prevented our water from meeting all of the requirements as stated in the Federal Drinking Water Standards. Each issue is listed in this report as a violation and we are closely working with the TCEQ to achieve solution. The information that follows list all of the federally regulated or monitored contaminants which have been found in our drinking water. The U.S. EPA requires water systems to test for up to 97 contaminants.

## REGULATED INORGANIC CONTAMINANTS

YEAR / CONSTITUENT NAME / UNIT	RANGE DETECTED		USEPA LIMITS		SOURCE OF CONTAMINANT
	AVERAGE	RANGE	MCL	MCLG	
2004 Barium (ppm)	0.09	0.09 - 0.09	2	2	- Discharge of drilling waste, erosion of natural deposits.
2007 Fluoride (ppm)	0.78	0.78 - 0.78	4	4	- Erosion of natural deposits, water additive.
2007 Nitrate (ppm)	0.12	0.12 - 0.12	10	10	- Petroleum/metal discharge; erosion of natural deposits.
2005 Gross Beta Emitters (pCi/L)	4.1	4.1 - 4.1	50	0	- Decay of natural/man-made deposits.
2004 Selenium (ppb)	4.8	4.8 - 4.8	50	50	- Erosion of natural deposits.
2007 Total Trihalomethanes (ppb)	45.6	23.6 - 77.8	80	n/a	- Byproduct of drinking water disinfection.
2007 Total Haloacetic Acids (ppb)	25.9	0 - 44	60	n/a	- Byproduct of drinking water disinfection.

**ORGANIC CONTAMINATES** - None detected.

**UNREGULATED INITIAL DISTRIBUTION SYSTEM EVALUATION (IDSE) FOR DISINFECTION BYPRODUCTS** - This evaluation is sampling required by EPA to determine the range of total trihalomethane and haloacetic acid in the system for future regulations. The samples are not used for compliance, and may have been collected under non-standard conditions. EPA also requires the data to be reported here.

2007 Total Haloacetic Acids (ppb)	41.4	0 - 178	n/a	- Byproduct of drinking water disinfection.
2007 Total Trihalomethanes (ppb)	85.8	16.8 - 508.5	n/a	- Byproduct of drinking water disinfection.

**TOTAL ORGANIC CARBON (TOC)** no health effects. The disinfectant can combine with TOC to form disinfection byproducts. Disinfection is necessary to ensure that water does not have unacceptable levels of pathogens. Byproducts of disinfection include trihalomethanes (THMs) and haloacetic acids (HAA) which are reported elsewhere in this report.

Year 2007 Data	Avg	Min	Max	MCL	MCLG	
Source Water TOC (ppm)	6.88	6.25	9.02	n/a	n/a	- Naturally present in the environment.
Plant 1 Drinking Water TOC (ppm)	4.07	3.44	4.80	n/a	n/a	- Naturally present in the environment.
Plant 2 Drinking Water TOC (ppm)	4.06	3.64	4.42	n/a	n/a	- Naturally present in the environment.
Plant 1 Removal Ratio (% removal*)	1.39	1.08	1.68	n/a	n/a	- Naturally present in the environment.
Plant 2 Removal Ratio (% removal*)	1.42	1.03	1.65	n/a	n/a	- Naturally present in the environment.

\* Removal ratio is the percent of TOC removed by the treatment process divided by the percent of TOC required by TCEQ to be removed.

## MAXIMUM RESIDUAL DISINFECTANT LEVEL (MRDL)

	Avg	Min	Max	MCL	MCLG	
2007 Chloramines (ppm)	2.6	2.08	3.01	4.0	≤ 4.0	- Disinfectant used to control microbes.

**UNREGULATED CONTAMINANTS** Bromodichloromethane, Chloroform, Dibromochloromethane and Bromoform are disinfection by-products. There is no maximum contaminant level for these chemicals at the entry point to distribution.

	Avg	Min	Max	MCL	MCLG	
2007 Bromodichloromethane (ppb)	79.3	79.3	79.3	n/a	n/a	- Byproduct of drinking water disinfection.
2007 Chloroform (ppb)	109.4	109.4	109.4	n/a	n/a	- Byproduct of drinking water disinfection.
2007 Dibromochloromethane (ppb)	34.8	34.8	34.8	n/a	n/a	- Byproduct of drinking water disinfection.
2007 Bromoform (ppb)	2.05	2.05	2.05	n/a	n/a	- Byproduct of drinking water disinfection.

**TURBIDITY** has no health effects; however, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

	Highest Single Measurement	Lowest Monthly % of Samples Meeting Limits	Turbidity Limits	
2007 Turbidity - Plant 1 (NTU)	0.34	100%	TT/AL = 0.3	- Soil runoff.
2007 Turbidity - Plant 2 (NTU)	0.57	99.4%	TT/AL = 0.3	- Soil runoff.

**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 other microbes that are capable of causing disease. Coliform bacteria are more hardy than many disease-causing organism; therefore, their absence from water is a good indication that the water is microbiologically safe for human consumption.

	Highest Monthly % of Positive Samples	Unit of Measure	MCL	
2007 Total Coliform Bacteria	2.6	Presence	**	- Naturally present in the environment.

\*\* Presence of coliform bacteria in 5% or more of the monthly samples.

**FECAL COLIFORM** bacteria, in particular, *E. coli*, are members of the coliform bacteria group originating in the intestinal tract of warm-blooded animals and are passed into the environment through feces. The presence of fecal coliform bacteria (*E. coli*) in drinking water may indicate recent contamination of the drinking water with fecal material.

	Total Number of Positive Samples	Unit of Measure	MCL	
2007 Fecal Coliform and <i>E. coli</i>	4	Presence	***	- Human and animal fecal waste.

\*\*\* A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or *E. coli* positive.

## LEAD AND COPPER

	The 90th Percentile	Number of Sites Exceeding Action Level	Action Level	
2005 Lead (ppb)	2.1	0	15	- Lead and copper are a source of corrosion of household plumbing systems.
2005 Copper (ppm)	0.17	0	1.3	

## Secondary and Other Constituents - Not Associated with Adverse Health Effects

Many constituents, such as calcium, sodium, or iron, which are often found in drinking water, can cause taste, color, and odor problems. The taste and odor constituents are called secondary constituents and are regulated by the State of Texas, not the USEPA. These constituents are not causes for health concern. Therefore, secondaries are not required to be reported in this document, but they may greatly affect the appearance and taste of your water.

Year	Constituent	Average Level	Min Level	Max Level	Secondary Limit	Source of Constituent
2004	Aluminum (ppm)	0.133	0.133	0.133	0.2	Abundant naturally occurring element
2007	Bicarbonate (ppm)	136	136	136	NA	Corrosion of carbonate rocks such as limestone
2004	Calcium (ppm)	49.4	49.4	49.4	NA	Abundant naturally occurring element.
2007	Chloride (ppm)	277	277	277	300	Abundant naturally occurring element; used in water purification
2004	Copper (ppm)	0.001	0.001	0.001	1	Corrosion of household plumbing systems; erosion of natural deposits
2007	Hardness as Ca/Mg (ppm)	290	290	290	NA	Naturally occurring calcium and magnesium
2004	Magnesium (ppm)	8.1	8.1	8.1	NA	Abundant naturally occurring element.
2004	Manganese (ppm)	0.0011	0.0011	0.0011	.05	Abundant naturally occurring element.
2004	Nickel (ppm)	0.002	0.002	0.002	NA	Erosion of natural deposits
2007	pH	7.6	7.6	7.6	>7.0	Measure of corrosivity of water.
2004	Sodium (ppm)	90	90	90	NA	Erosion of natural deposits; oilfield byproduct
2007	Sulfate (ppm)	114	114	114	300	Naturally occurring; oilfield byproduct
2007	Total Alkalinity (ppm) as CaCO <sub>3</sub>	136	136	136	NA	Naturally occurring soluble mineral salts.
2007	Total Dissolved Solids (ppm)	736	736	736	1000	Total dissolved mineral constituents in water

## NOTICE OF VIOLATION

### ACUTE COLIFORM

### Maximum Contaminant Level (MCL) Violation

### FECAL COLIFORM OR *E. COLI* FOUND

Duration: 8/13/2007 to 8/16/2007

Health Effects - Fecal coliforms and *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.

The City of Corpus Christi Water Department detected fecal coliform or *E. coli* in the drinking water during the period of August 13 to 16, 2007. The City took immediate action to restore water quality and to address the 13 violations as issued by the Texas Commission on Environmental Quality (TCEQ). For more information, contact (361) 826-1879.

We regret the inconvenience placed upon residents; and we promise to provide personal, attentive and reliable service. We also pledge to provide you with a timely response and resolution to your concerns regarding water quality concerns.

Most importantly, we will provide immediate public notification should our water quality ever be compromised.