

# WATER QUALITY REPORT 2010



CITY OF  
CORPUS  
CHRISTI  
WATER  
DEPARTMENT

Printed June 2011

## Home Plumbing Pipes May Impact Your Exposure to Lead

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 Corpus Christi Water Department takes measures to provide high quality drinking water, however, we 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 faucet 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>."

### IMPORTANT HEALTH INFORMATION

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.

Este informe incluye información importante sobre el agua potable. Si tiene preguntas o comentarios sobre éste informe en español, favor de llamar al 826-1879 para hablar con una persona bilingüe en español.

**PLEASE DON'T WASTE THE WET STUFF.**

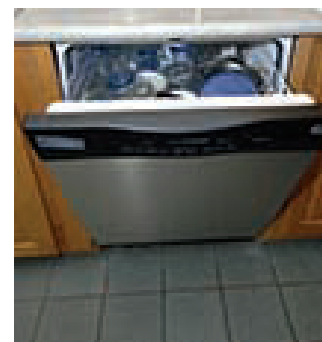


Get a **FREE** water efficient  
*Showerhead,*  
**JUST FOR ATTENDING!**

The City of Corpus Christi Water Department (CCWD) will hold a meeting to discuss the contents of the 2010 annual water quality report. Attendees will receive a free 1.5 gallon per minute (gpm) showerhead. The meeting will be held on Thursday, June 30, 2011 at 6:00 p.m. Business offices are located at 2726 Holly Road, Corpus Christi, Texas. Please join us as we share our challenges and our accomplishments. We want to provide our community with the best drinking water. Showerheads are limited to one per adult customer.

### SCALE DEPOSITS ON DISHWARE

Earlier this year we received customer concerns regarding the build up of scale deposits in the form of film or haze on dishware. Water in the Coastal Bend is known to be "hard" based on the high mineral content of the soil. We learned that the American Cleaning Council, a manufacturer's trade group representing most detergent companies, issued a voluntary ban on phosphates in dishwasher detergents effective July 1, 2010. For more information, visit [www.corpuschristiwater.com](http://www.corpuschristiwater.com) then click on News and Events.



*Many homeowners were unaware that their dishwasher detergent had removed the use of phosphates which helps to remove scale build up on dishes. The removal of phosphates is meant to be good for our waterways across the country including Nueces River, Oso Bay, etc.*

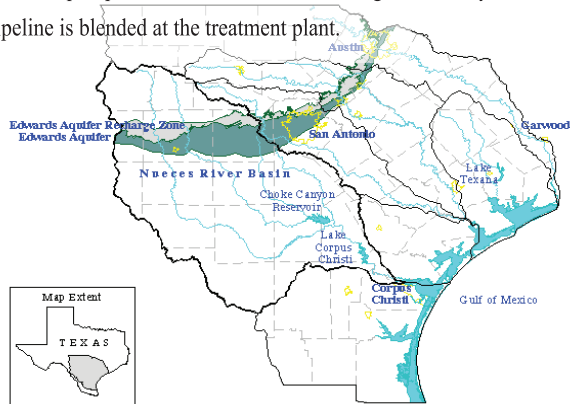
TWELVE YEARS OF WATER **12** QUALITY REPORTING

The Corpus Christi Water Department is pleased to present its 2010 Annual Water Quality Report in accordance with United States Environmental Protection Agency (EPA) National Primary Drinking Water Regulations, 40 CFR Part 141 Subpart O, which require all drinking water suppliers to provide the public with an annual statement describing the water supply and the quality of its water.

Highly trained professionals take steps to perform extensive water quality monitoring and testing so that our water supply meets or exceeds all federal and state drinking water requirements. We are mindful of our responsibility to provide you with a safe product at all times.

Corpus Christi's surface water is supplied through a network of three reservoirs, including Choke Canyon and Lake Corpus Christi that reside in the Nueces River Basin. The Nueces River transports water from the two reservoirs where it is pumped to the O. N. Stevens Water Treatment Plant.

Water pumped from Lake Texana through the Mary Rhodes Pipeline is blended at the treatment plant.



**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.

**Cryptosporidium Monitoring**

The City monitors for Cryptosporidium, a microbial parasite that may be commonly found in surface water. Cryptosporidium may come from animal and human feces in the watershed. The result of our monitoring indicated that there may be Cryptosporidium in the raw water and/or treated finished water. Although treatment by filtration removes Cryptosporidium, it cannot guarantee 100 percent removal. The testing methods used cannot 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.

**Source Water Susceptibility Assessment**

The City's water is obtained from a combination of water sources. The Atascosa River and the Nueces River supply water to Lake Corpus Christi, while the Frio Rio supplies water to Choke 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.

The sources of drinking water, whether it is tap or bottled water, comes from rivers, lakes, streams, ponds, reservoirs, springs or well. 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.

The Texas Commission on Environmental Quality has developed a Source Water Susceptibility Assessment of our drinking water sources. 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 City is working on a Source Water Assessment Plan, along with the Nueces River Authority to identify the source of pollutants in the City's source reservoirs and rivers with the effort to contain or eliminate them. For more information on source water assessments and protection efforts, at our system, please call 361-826-1200. The report will be posted to our web site at [www.corpuschristiwater.com](http://www.corpuschristiwater.com).

- High susceptibility means there are activities near the source water and the natural conditions of the aquifer or watershed make it very likely constituents may come into contact with the source water. It does not mean that there are any health risks present.
- Medium susceptibility means there are activities near the source water and the natural conditions of the aquifer or watershed make it somewhat likely that chemical constituents may come into contact with the source water. It does not mean that there are any health risks present.
- Low susceptibility means there are activities near the source water and the natural conditions of the aquifer or watershed make it unlikely that chemical constituents may come into contact with the source water. It does not mean that there are any health risks present.

System Susceptibility Summary Entry Point ID: 001	
Asbestos	- Low
Cyanide	Low
Metals	- High
Microbial	- Medium
Minerals	- High
Radiochemical	- High
Synthetic Organic Chemicals	- High
Disinfection Byproducts	- High
Volatile Organic Chemicals	- High
Drinking Water Contaminant Candidate	- High
Other	- Medium

Entry Point Susceptibility Summary	
Asbestos	- Low
Cyanide	Low
Metals	- High
Microbial	- Medium
Minerals	- High
Radiochemical	- High
Synthetic Organic Chemicals	- High
Disinfection Byproducts	- High
Volatile Organic Chemicals	- High
Drinking Water Contaminant Candidate	- High
Other	- Medium

**ORGANIC\* AND INORGANIC CONTAMINANTS**

Year / Constituent	Average	Range	MCL	MCLG	Likely Source of Contaminant
2010 Atrazine* (ppb)	0.26	0.26 - 0.26	3.0	3.0	Agricultural runoff
2004 Barium (ppm)	0.09	0.09 - 0.09	2	2	Discharge of drilling waste, erosion of natural deposits
2010 Fluoride (ppm)	0.70	0.70 - 0.70	4	4	Erosion of natural deposits, water additive
2010 Nitrate (ppm)	0.52	0.52 - 0.52	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

**UNREGULATED INITIAL DISTRIBUTION SYSTEM EVALUATION (IDSE) FOR DISINFECTION BY-PRODUCTS**

This evaluation is sampling required by EPA to determine the range of total trihalomethanes (THM) and haloacetic acids (HAA5) in the system for future regulations. The samples are not used for compliance, and may have been collected under non-standard conditions. USEPA also requires the data to be reported here.

2007 Total Haloacetic Acids (ppb)	42.0	0 - 178	NA	NA	By-product of drinking water disinfection
2007 Total Trihalomethanes (ppb)	85.8	16.8 - 508.5	NA	NA	By-product of drinking water disinfection

**TOTAL ORGANIC CARBON**

Total Organic Carbon (TOC) has no health effects. The disinfectant can combine with TOC to form disinfection by-products. Disinfection is necessary to ensure that water does not have unacceptable levels of pathogens. By-products of disinfection include trihalomethanes (THM) and haloacetic acids (HAA5) which are reported elsewhere in this report. \* Removal ratio is the percent of TOC removed by the treatment process divided by the percent of TOC required by TCEQ to be removed.

2010 Source Water (ppm)	6.07	5.58 - 6.78	NA	NA	Naturally present in the environment
2010 Plant 1 (ppm)	3.53	3.11 - 4.00	NA	NA	Naturally present in the environment
2010 Plant 2 (ppm)	3.54	3.11 - 3.80	NA	NA	Naturally present in the environment
2010 Plant 1 Removal Ratio (% removal*)	1.26	1.09 - 1.47	NA	NA	Naturally present in the environment
2010 Plant 2 Removal Ratio (% removal*)	1.26	1.10 - 1.50	NA	NA	Naturally present in the environment

**UNREGULATED CONTAMINANTS**

Unregulated contaminants such as bromodichloromethane, chloroform, dibromochloromethane and bromoform as disinfection by-products. There is no maximum contaminant level for these chemicals at the entry point to distribution.

2010 Bromodichloromethane (ppb)	10.93	10.93 - 10.93	NA	NA	By-product of drinking water disinfection
2010 Chloroform (ppb)	10.49	10.49 - 10.49	NA	NA	By-product of drinking water disinfection
2010 Dibromochloromethane (ppb)	5.60	5.60 - 5.60	NA	NA	By-product of drinking water disinfection
2010 Bromoform (ppb)	1.61	1.61 - 1.61	NA	NA	By-product of drinking water disinfection

**DISINFECTION BYPRODUCTS**

2010 Total Trihalomethanes (ppb)	58.6	35.1 - 85.9	60	NA	By-product of drinking water disinfection
2010 Total Haloacetic Acids (ppb)	30.3	16.7 - 38.6	80	NA	By-product of drinking water disinfection

**TURBIDITY (NTU)**

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.

Year / Constituent	Highest Single Measurement	Lowest % of Samples Meeting Limits	Entry Point MCL	Single Measurement MCL	Likely Source of Contaminant
2010 Plant 1 (NTU)	0.27	100.0	<0.3 **	1.0	Soil runoff
2010 Plant 2 (NTU)	0.27	100.0	<0.3 **	1.0	Soil runoff

Year / Constituent	Highest Single Measurement	Lowest % of Samples Meeting Limits	Entry Point MCL	Likely Source of Contaminant
2010 Plant 1 (NTU)	0.27	100.0	<0.3 **	Soil runoff
2010 Plant 2 (NTU)	0.27	100.0	<0.3 **	Soil runoff

### MICROBIOLOGICAL CONTAMINANTS

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

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

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.

Year / Constituent	Highest Monthly % of Positive Samples	Unit of Measurement	MCL	Likely Source of Contaminant
2010 Total Coliform Bacteria	0.9	Presence	***	Naturally present in the environment
Year / Constituent	Total # of Positive Samples	Unit of Measurement	MCL	Likely Source of Contaminant
2010 Fecal Coliform and <i>E. coli</i>	0	Presence	****	Naturally present in the environment

### LEAD AND COPPER RULE MONITORING

Year / Constituent	90th Percentile	Number of Sites Exceeding Action Level	Action Level	Likely Source of Contaminant
2009 Lead (ppb)	4.53	1	15.0	Lead and Copper are a source of corrosion of households plumbing systems. Erosion of natural deposits.
2009 Copper (ppm)	0.123	0	1.3	

### MAXIMUM RESIDUAL DISINFECTANT LEVEL

Year / Constituent	Average	Range	MCL	MCLG	Likely Source of Contaminant
2010 Chloramines (ppm)	2.86	2.83 - 2.90	4.0	<4.0	Disinfectant used to control microbes.

### UNREGULATED CONTAMINANT MONITORING RULE 2 (UCMR2)

Year / Screening Survey List 2	Average	Range	EPA MCL	Likely Source of Contaminant
2009 Nitrosamines (ppm)				Naturally found in water or form when disinfection is added for treatment.
N-Nitrosodimethylamine (NDMA)	0.0069	0.0026 - 0.0147	NA	

### 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	Range	Secondary Limit	Likely Source of Contamination
2004 Aluminum (ppm)	0.133	0.133 - 0.133	0.05 to 0.2	Abundant naturally occurring element
2010 Bicarbonate (ppm)	51	51 - 51	NA	Corrosion of carbonate rocks such as limestone
2004 Calcium (ppm)	49.4	49.4 - 49.4	NA	Abundant naturally occurring element
2010 Chloride (ppm)	67	67 - 67	300	Abundant naturally occurring element; used in water purification
2004 Copper (ppm)	0.001	0.001 - 0.001	1.0	Corrosion of household plumbing systems; erosion of natural deposits
2008 Hardness as Ca/Mg (ppm)	185	185 - 185	NA	Naturally occurring calcium and magnesium
2004 Magnesium (ppm)	8.1	8.1 - 8.1	NA	Abundant naturally occurring element
2004 Manganese (ppm)	0.001	0.001 - 0.001	0.05	Abundant naturally occurring element
2004 Nickel	0.002	0.002 - 0.002	NA	Erosion of natural deposits
2010 pH	8.2	8.2 - 8.2	Not below 7.0	Measure of corrosivity of water
2010 Sodium (ppm)	53.6	53.6 - 53.6	NA	Erosion of natural deposits; oil field by-product
2010 Sulfate (ppm)	57.8	57.8 - 57.8	300	Naturally occurring; oil field by-product
2010 Total Alkalinity (ppm) as CaCO <sub>3</sub>	51	51 - 51	NA	Naturally occurring soluble mineral salts
2010 Total Dissolved Solids (ppm)	274	274 - 27.4	1000	Total dissolved mineral constituents in water



# Drinking Water Quality Report 2010

*Drinking water is regulated by the Texas Commission on Environmental Quality (TCEQ). The information shown on this page 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.*

## DEFINITIONS:

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

**Maximum Contaminant Level (MCL)** - The highest level of a contaminate allowed in drinking water. MCLs are set as close to the MCLG as feasible using the best available treatment technology.

**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.

**Maximum Residual Disinfectant Level (MRDL)** - 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.

**Maximum Residual Disinfectant Level Goal (MRDLG)** - The level of a drinking water disinfectant below which there is no known or expected risk to health.

**Most Probable Number (MPN)**

**Nephelometric Turbidity Units (NTU)** -

A measure of turbidity in water.

**pico-curies per liter (pCi/L)** -

A measure of radioactivity.

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

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

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

**Turbidity** - A measure of clarity of drinking water.

