



# drinking water quality 2003 annual report



Water Emergency [24-hours]  
361-857-1888

Water Administration Office  
361-857-1881

USEPA Safe Drinking Water  
Hotline 800-426-4791

Published June 2004

Este reporte contiene informacion sobre su agua potable. Para obtener una copia de este reporte en Espanol, llame al (361) 857-1879.

annual public meeting  
6:00 pm, Wednesday  
June 30, 2004  
2726 Holly Road  
Corpus Christi, Texas

# drinking water quality 2003 annual report



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Corpus Christi, TX  
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# annual drinking water quality report

This sixth annual Drinking Water Quality Report provides information on Corpus Christi's drinking water. The United States Environmental Protection Agency (USEPA) requires that all drinking water suppliers in the country provide a water quality report to their customers on an annual basis.

Tests performed on the Corpus Christi drinking water indicate that it met all standards set by the USEPA. Information regarding these test results can be found in the table at the end of this report. USEPA requires water systems to test up to 97 constituents. Only those constituents found in our drinking water are reported here.

We hope that you take a few minutes to read this important report. Please contact us if you have any comments or questions.

## TCEQ completes local source water assessment

In 2003, the Texas Commission on Environmental Quality (TCEQ) completed Phase I of the Source Water Assessment of the water sources used by the City of Corpus Christi. The 1996 amendments to the Safe Drinking Water Act require all states to assess their public water sources and provide the results to each respective water system. The assessment is developed with the goal of providing public water systems with useful information that will help protect our source water.

Consumers may access this information by submitting a letter of request to the City of Corpus Christi Water Department, Attn: Source Water Assessment at P.O. Box 9277, Corpus Christi, TX 78469.

## special notice

**For the elderly, infants, cancer patients, people with HIV/AIDS and other immune system disorders**

You may be more vulnerable than the general population to certain microbial contaminants such as Cryptosporidium, in drinking water. Infants, some elderly, or immuno-compromised 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 for 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 are available from the Safe Drinking Water Hotline 800-426-4791.



# city of corpus christi · water sources

**T**he City of Corpus Christi Water Department serves more than 278,000 Corpus Christi citizens. Our mission is to effectively manage the water supply, production and distribution system in order to meet the water supply needs and to provide safe drinking water that meets all state and federal regulations. We are also committed to maintaining infrastructure to ensure the adequacy of the water system to reach projected growth requirements and to identify and acknowledge consumer needs and expectations.

Our primary supply of water comes from surface water resources. The Atascosa, Frio and Nueces rivers supply water to the Lake Corpus Christi / Choke Canyon Reservoir System. Water from Lake Texana is transported through the 101 mile long Mary Rhodes Pipeline. As water travels over the surface of the land, it dissolves naturally occurring minerals and can be polluted by animals, humans, or industrial activity.

Contaminants that may be present in a community's water include:

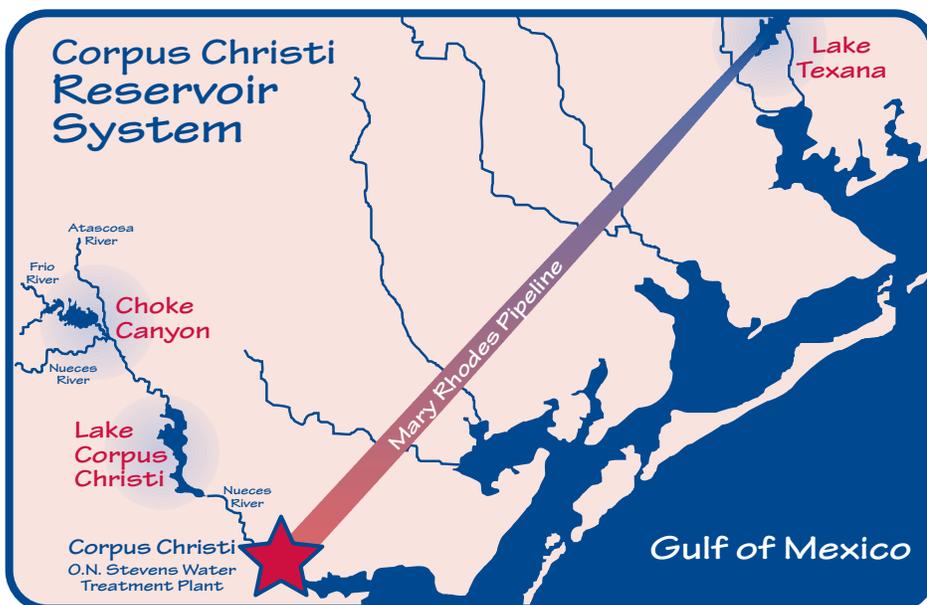
- **Biological contaminants**, including viruses and bacteria;
- **Inorganic contaminants**, such as metals and minerals;
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, storm water runoff, and residential uses;
- **Organic chemicals**, from industrial or petroleum use and radioactive materials.

Water quality for tap and bottled water is regulated by two governmental agencies. The U. S. Environmental Protection Agency sets regulations which limit the amount of certain contaminants in water provided by public water systems to ensure that tap water is safe to drink. On the other hand, the U. S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Some contaminants found in drinking water may cause taste, color, or odor problems. These types of problems are not necessarily causes for health concerns. If you experience any of these problems, please contact the Water Utilities Laboratory at 826-1200.

Drinking water, including bottled water, may reasonably be expected to contain small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.

For more information, call the Environmental Protection Agency Safe Drinking Water Hotline at 800-426-4791. EPA web site: [www.epa.gov/safewater/](http://www.epa.gov/safewater/)



## more information & important phone numbers

**This report in Spanish:**  
857-1879

**Información en español:**  
857-1879

**Laboratory water testing information:**  
826-1200

**City Council meeting times:**  
880-3105

**Water Conservation:**  
857-1873

**Mailing address:**  
City of Corpus Christi  
Water Department  
P. O. Box 9277  
Corpus Christi, Texas 78469-9277

**Water Department web site**  
[www.cctexas.com](http://www.cctexas.com)  
<http://corpuschristiwater.com>

## consumer confidence web sites

**TCEQ web site:**  
[www.tnrc.state.tx.us/permitting/waterperm/pdw/ccr.html](http://www.tnrc.state.tx.us/permitting/waterperm/pdw/ccr.html)

**EPA web site:**  
[www.epa.gov/safewater/](http://www.epa.gov/safewater/)

## annual public meeting

6:00 pm, Wednesday  
June 30, 2004  
2726 Holly Road  
Corpus Christi, Texas

# lead in household pipes

**T**he Lead and Copper Rule was published on June 7, 1991. It requires that water systems conduct monitoring of lead from customer taps. According to this rule, when the level of lead or copper reaches the action level (15 parts per billion for lead and 1.3 parts per million for copper) in ten percent of the tap water samples, the water system must begin certain water treatment steps. An action level is different from a MCL in that while a MCL is a legal limit on a contaminant, an action level is a trigger for additional prevention or removal steps.

Test results of City of Corpus Christi drinking water samples conducted by Texas Commission on Environmental Quality (TCEQ) in 2002 showed that the lead and copper values were below the action level in all of the water samples analyzed.

As homeowners, you should inspect your home's interior piping system for the possible presence of lead. Homes built before October 1984, may have soldered lead joints in plumbing lines. Lead used on copper pipes may dissolve or leach into your drinking water.

The City's water supply pipes do not contain lead. The City has maintained a corrosion control treatment program at the O. N. Stevens Water Treatment Plant that helps to make water noncorrosive. Water utilities throughout the United States and the USEPA recognize that corrosion

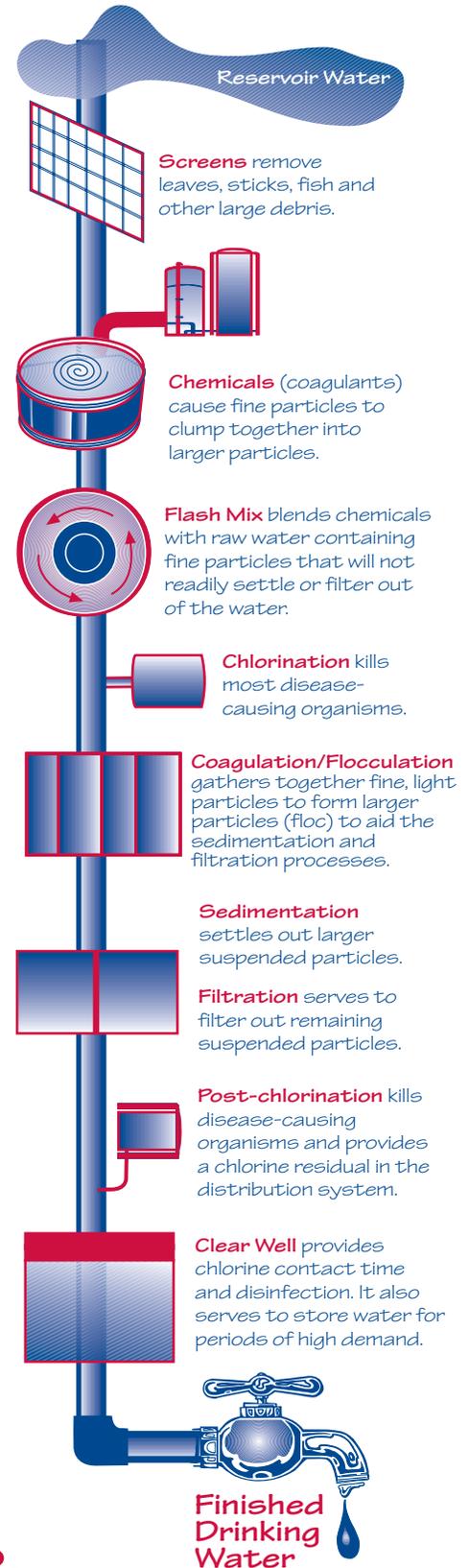
control limits lead from dissolving or leaching into drinking water from within a home's interior plumbing.

Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells, and kidneys. The greatest risk is to young children and pregnant women.

**The USEPA recommends taking the following actions to reduce lead in drinking water.**

- 1.** Flush your water pipes before drinking. Faucets that have not been used for six hours or longer should be allowed to "flush".
- 2.** Use only cold water for consumption. Use only water from the cold-water tap for drinking and cooking.
- 3.** Look for pipes or solder that have a dull gray metal and are easily scratched with a house key. If you see signs of corrosion, frequent leaks, rust-colored water, stained dishes or laundry, or if your non-plastic plumbing is less than five years old, you should take further action.
- 4.** Since you cannot see, taste, or smell lead dissolved in water, testing is the only sure way of telling whether or not there are harmful quantities of lead in your drinking water. Contact a competent laboratory.
- 5.** Seek additional information by calling the USEPA Safe Drinking Water Hotline at 800-426-4791 or the National Lead Information Center at 800-424-LEAD [5323] to receive an information packet or for detailed information or questions.

## the water treatment process



# water quality monitoring results

**F**ederally regulated or monitored constituents, as identified below, have been found in our drinking water. The U. S. Environmental Protection Agency requires water systems to test for up to 97 constituents. During 2003, drinking water samples collected from the City of Corpus Christi met all state and federal drinking water requirements. All water quality results are for the year 2003, except for lead and copper which are for 2002.

Regulated Constituents	Corpus Christi's Water Results		USEPA Regulations		Source of Constituent
	Average	Range <sup>(1)</sup>	Maximum Contamination Level (MCL)	Maximum Contamination Level Goal (MCLG)	
<b>Constituents</b>					
<b>Inorganics</b>			USEPA MCL	USEPA MCLG	
Barium (ppm)	0.072	0.072-0.072	2	2	• Discharge of drilling waste or from metal refineries; erosion of natural deposits
Fluoride (ppm)	0.71	0.71 - 0.71	4	4	• Water additive which promotes strong teeth; erosion of natural deposits
Nitrate (ppm)	0.57	0.57 - 0.57	10	10	• Runoff from fertilizer use; erosion of natural deposits
Gross beta emitters (pCi/L) <sup>(2)</sup>	5.50	5.50 - 5.50	50	0	• Decay of natural and man-made deposits
<b>Lead and Copper</b>	The 90th Percentile	Number of Sites Exceeding Action		USEPA Action Level	
Lead (ppb)	4.7	0		15	• Corrosion of household plumbing systems
Copper (ppm)	0.127	0		1.3	• Corrosion of household plumbing systems
<b>Turbidity</b>	Highest Single Measurement	Lowest Monthly % of Samples Meeting Limits	USEPA MCL	USEPA MCLG	
Turbidity (NTU) - Plant I	0.64	99.5	TT/AL = 0.3 (3)	(4)	• Soil runoff
Turbidity (NTU) - Plant II	0.28	100	TT/AL = 0.3 (3)	(4)	• Soil runoff
<b>Organics</b>			USEPA MCL	USEPA MCLG	
Atrazine (ppb)	0.30	0.17 - 0.64	3	3	• Runoff from herbicide used on row crops
<b>Unregulated Constituents (524.2)</b>			USEPA MCL	USEPA MCLG	
Bromoform (ppb)	4.80	2.5 - 8.1	(3)	(4)	• Unregulated contaminant monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants
Bromodichloromethane (ppb)	8.38	5.2 - 11	(3)	(4)	
Chloroform (ppb)	6.15	4.3 - 8.6	(3)	(4)	
Chlorodibromomethane (ppb)	7.00	1.3 - 12	(3)	(4)	
<b>Disinfection By-Products</b>			USEPA MCL	USEPA MCLG	
Total Trihalomethanes (ppb)	37.1	27.1 - 52.3	80	(4)	• By-products of drinking water disinfection
Total Haloacetic Acids (ppb)	32.7	19.5 - 38.7	60	(4)	• By-products of drinking water disinfection
<b>Total Coliform</b>	Highest Monthly Percentage of Positive Samples			USEPA MCL	
Total Coliform Bacteria	2.8		Presence of coliform bacteria in ≥5% of monthly samples		• Naturally present in the environment
<b>Total Organic Carbon</b>	Lowest Removal Percentage	Range of Detected Level			
Plant I (ppm)	26.1%	2.1 - 3.9	(3)	(4)	• Naturally occurring organics in water
Plant II (ppm)	27.3%	2.5 - 3.7	(3)	(4)	• Naturally occurring organics in water
Raw Water (ppm)	-	4.0 - 5.6	(3)	(4)	• Naturally occurring organics in water

(1) Range of detected levels, indicated for more than one sample collected in 2003  
 (3) EPA has not set MCLs for this constituent

(2) 50 pCi/L = 4 mrems/year  
 (4) EPA has not set MCLGs for this constituent

## key terms

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

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

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

**ppm** • Parts per million or milligrams per liter (mg/l)

**pCi/L** • Pico-curies per liter - The measure of radioactivity in water.

**ppb** • Parts per billion or micrograms per liter (µg/l)

**umho/cm** • Micromho per centimeter

# did you ever wonder?

**d**id you ever wonder how much water the average family uses per day, per month, or per year? Typically, the average family of three in Corpus Christi uses approximately 150 gallons per day, which equals to 4,500 gallons in a month or 54,000 gallons a year. We suggest you compare these figures to your monthly utility bill. You might discover that you are well below or well above those reported for the average family. In other words, you can brag to your neighbors or take action to start making a difference in your family's water use.

'Did you every wonder?' is designed to inform you of water quality and the possibilities of water conservation. We hope you find it rewarding to learn more about your drinking water as we offer a frank discussion.

• There are many constituents that remain in drinking water (as well as bottled water) after it is treated. In the case of drinking water, the Texas Commission on Environmental Quality tests for such constituents. These constituents, known as secondary constituents, do not affect our health but are important to the aesthetic quality of our drinking water.

Here is what we received from TCEQ.

Secondary Constituents	Value
Calcium	32 ppm
Chloride	36 ppm
Dilute Conductance	388 umho/cm
Dissolved Solids	205 ppm
pH	7.84
Sodium	34 ppm
Sulfate	56 ppm
Total Alkalinity	72 ppm
Total Hardness	93 ppm or 5.4 grains p/gal

• 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 organisms; therefore, their absence from water is a good indication that the water is microbiologically safe for human consumption.

• The City of Corpus Christi is studying the feasibility of constructing a large-scale desalination facility to serve as a new source of drinking water for the future needs of Texas. The project envisions a 25-million-gallon-per-day desalination plant on a mainland site. The City is using a \$500,000 grant received from the Texas Water Development Board in 2003 to conduct the study. The City is contributing in-kind services as a match for the grant funds. The study, due at the end of the year, will provide the City of Corpus Christi and the State of Texas with the estimated costs of desalination using a seawater source, or a combination of seawater and brackish water from underground aquifers in this area.

• On occasion, you may find your water has a cloudy or milky appearance. It is often the result of air which is trapped in the water. Turning the faucet on releases the pressure in the water lines, causing air bubbles to appear. Once the water is drawn from the faucet and allowed to settle, the water will appear clear. Air bubbles do not affect the quality of water; however, you can report this to the Water Dispatcher at 857-1888.

• Did you know that 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.

• Above average precipitation during 2003 and 2004 has brought our reservoir to a desirable level, making the outlook for our regional water supply to be very favorable. Even with such good news, it is still a good idea to conserve water whenever possible. Water conservation is an ongoing effort for our community because it helps us to make the most of our existing water supplies and saves you money.

## Here are some tips to help you make a difference at home:

- Repair all leaks promptly.
- Don't use the toilet as a wastebasket.
- Water your lawn early in the morning.
- Run the irrigation sprinkler on manual so that it can be turned on when grass blades show signs of stress.
- Wash full loads of clothes and dishes.
- Turn off the water while brushing your teeth.
- Take shorter showers or shallow baths.
- If it's time to replace your clothes washer or dishwasher, purchase a high-efficiency model.
- Encourage teachers to utilize the City's free water educational programs.
- Call the Water Hotline at (361) 857-1600 to request a free water saving kit.
- For more conservation tips <http://corpuschristiwater.com>