City of Corpus Christi

Published June 2000

DRINKING Water QUALITY Report '99

Always at your service.

WATER DEPARTMENT
City of Corpus Christi

Este reporte contiene informacion sobre su agua potable. Para obtener una copia de este reporte en Espanol, por favor llame al 361/ 857-1881.

Your Water … It's Safe.

Water is one of our most precious resources. We simply can't live without it. But because it flows so easily from our faucets, most of us don't appreciate what a valuable commodity it really is.

This second annual Water Quality Report is being delivered to every household in Corpus Christi. It is designed to inform you about the quality of our drinking water and how it compares to the guidelines set by the U. S. Environmental Protection Agency (USEPA). This report also satisfies the requirements set forth by the Safe Drinking Water Act of 1996. Most importantly, we want you to know that when you drink tap water from the Corpus Christi reservoir system, you are drinking clean, high quality water that meets and exceeds state and federal government standards.

… water quality that meets and exceeds government standards.

Many people are surprised to learn that ALL drinking water, including bottled water, is likely to contain some level of contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. You can obtain more information about contaminants and potential health effects by calling EPA's Safe Drinking Water Hotline 800-426-4791.

Special Information for People with Weakened Immune Systems

Some people may be more vulnerable to certain 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 about drinking water. EPA / Centers 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 (800-426-4791).

City of Corpus Christi

Your local Water Department is part of the City of Corpus Christi. As a municipal governmental agency, we are committed to excellence in the delivery of a vital natural resource. As a resident of the city, we encourage you to be involved and to learn more about our water supply system and the quality of water. City Council meetings are held most Tuesdays at City Hall located at 1201 Leopard Street. For meeting dates and times, please call the City Secretary's office at (361) 880-3105.

The Source of Your Water

Water quality in urban areas is dependent on the activities that occur within its water shed. Watersheds are those land areas that catch rain and drain to a specific stream, river or lake. As rain water travels over the land's surface and down the river, it dissolves naturally occurring minerals and picks up other contaminants. Untreated water may contain bacteria, viruses, salts and various organic chemical contaminants.

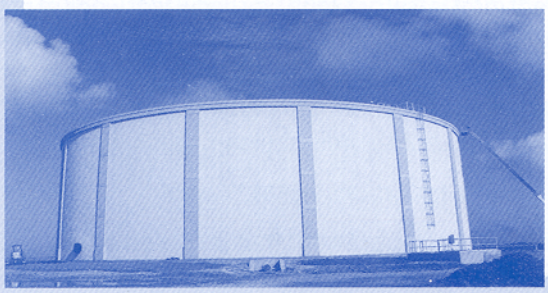
Knowing where your water comes from is the first step towards insuring that the quality of the water remains safe. Rainfall in the Nueces River Basin drains to one of the two reservoir systems that serve Corpus Christi and surrounding communities. Lake Corpus Christi located at Mathis has a capacity of 242,240 acre feet and Choke Canyon Reservoir has a storage capacity of 691,900 acre feet. Water from these two reservoirs is transported through the Nueces River. The process of purification begins when the raw water is pumped to the O. N. Stevens Water Treatment Plant.

Water from Lake Texana is pumped 101 miles through the Mary Rhodes Pipeline. The water is pumped directly to the treatment plant where it is blended with water from the Nueces River.

The Safe Drinking Water of Act of 1996 requires all states to establish Source Water Protection Programs that analyze existing and potential threats to the quality of public drinking water. The Texas Natural Resource Conservation Commission (TNRCC) has begun a review of all of the state's drinking water sources. TNRCC anticipates to begin assessing our watershed within the next three years.

O. N. Stevens Water Treatment Plant Pre-Sedimentation Basin Rehabilitation

The water treatment process requires pre-sedimentation basins to allow the water enough time to settle and remove small particles. The particles that settle at the bottom of the basin are removed daily and sent to sludge lagoons. The original pre-sedimentation basins were built during the 1950's. Rehabilitation of the basins(shown right) will help to improve water quality. Additional improvements taking place at the O. N. Stevens Water Treatment Plant include the north and south lagoons, and an on-site sludge disposal facility. The project will be completed by September 2000. Estimated project cost: $7.8 million



Staples Street Pumping Plant and Storage Reservoir

Additional pumping capacity is needed to correct pumping deficiencies to serve the projected growth of the southeast section of Corpus Christi. The new Staples Pumping Plant will address capacity requirements and improve system reliability by providing a fourth pumping facility. The 7.5 million gallon ground storage reservoir will be completed by June 2000. Estimated project cost: $5.6 million

Southside Transmission Main

The installation of a 60-inch water main represents the first section (approximately 42,500 feet) of a new transmission system needed to increase hydraulic capacity for conveying water from the Stevens Water Treatment Plant to developing areas in southeast Corpus Christi and Padre Island. The water will be stored in the 7.5 million gallon Staples Street Storage Reservoir. The new water main will help during peak demand periods. The transmission main will be completed by October 2000. Estimated project cost: $9.5 million

Protect the Water We Drink

Water quality is becoming increasingly difficult to keep safe and clean. Contaminants found in our surface water come from various sources in our environment. Products used at home or work often contain chemicals that, when discarded, contribute to the contamination of water resources. Some of the household products that may contribute to contamination include pesticides, paints, furniture strippers, flea and collar sprays, rat poisons, herbicides, insecticides, ammonia-based cleaners, toilet and drain cleaners, disinfectants, bleach cleaners, abrasive cleaners, pool chemicals, batteries, used oil, brake and transmission fluids and antifreeze.

We are all responsible for being wise to potential environmental hazards. What may be a small amount of a contaminant that drains from a driveway will add up over the course of the years. With everyone's help, hazardous waste products can be disposed of properly.

The City of Corpus Christi Solid Waste Services provide free Hazardous Waste Collection days four times a year. We urge everyone to participate and help keep our water safe.

Annual Public Meeting
& Your Participation is Welcome

We encourage residents to be involved in local water issues.
A public meeting will be held on
Wednesday, June 28, 2000 at 6:30 p.m.

Water Utilities Conference Room
2726 Holly Road
Corpus Christi, Texas

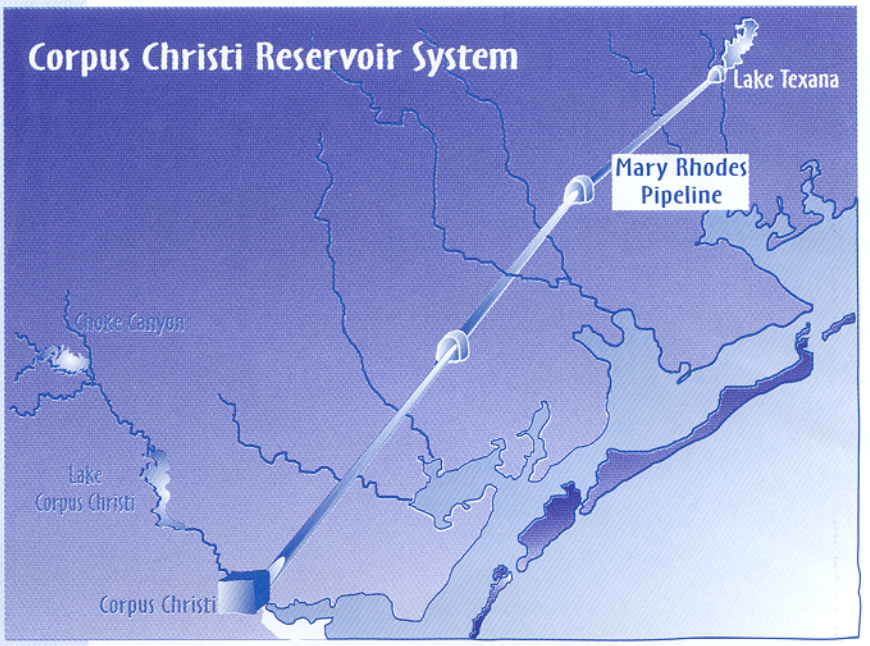
This annual report is mailed to all Corpus Christi water customers as required by USEPA Safe Drinking Water Act of 1996. Additional copies are available in local libraries and recreational centers and can be found on our web site.

Inside a Water Treatment Plant

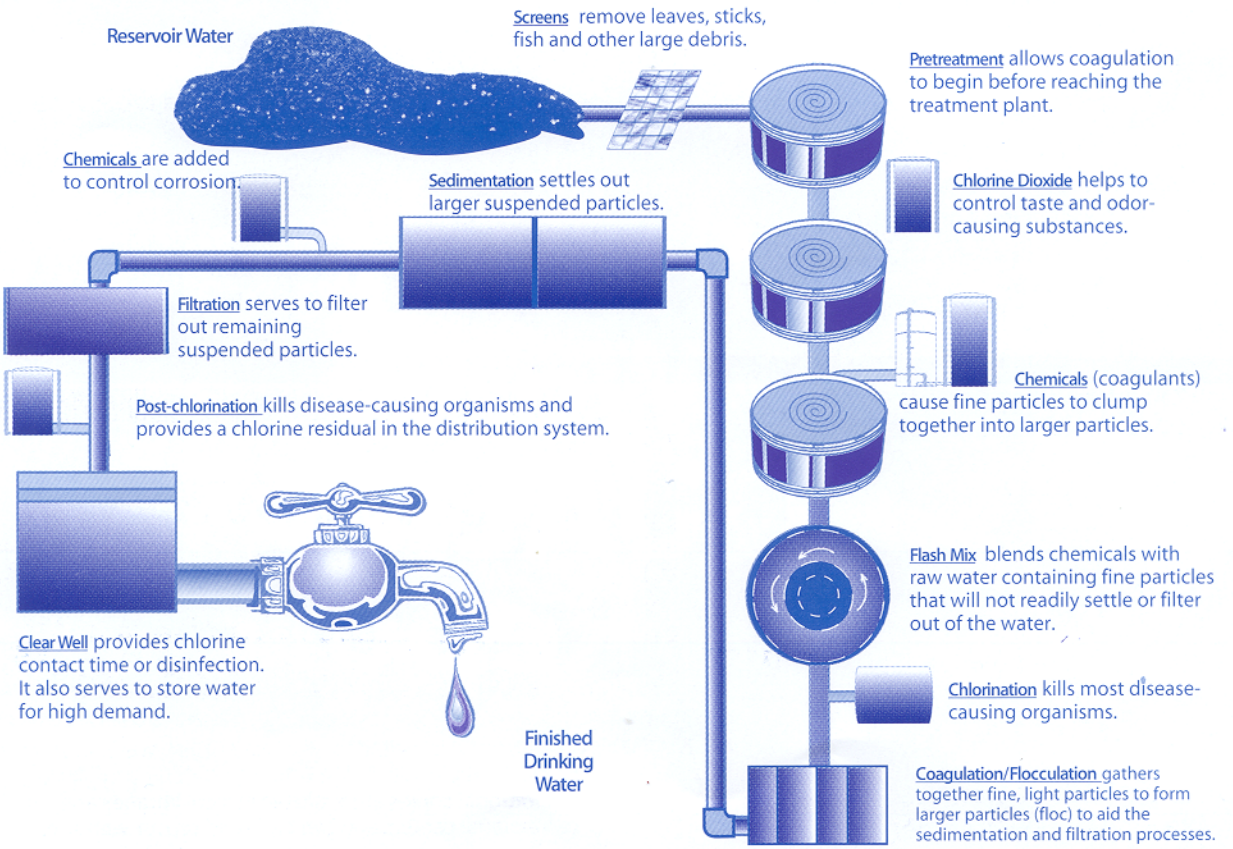
The Process that Makes Your Water Safe to Drink

Ever wondered how water is made safe to drink? A bucket of water drawn from the river reveals the murky water that we have to work with. This raw commodity is taken through a process of chemical treatment, disinfection, settling and filtration to make it safe to drink. Water treatment chemicals are added to remove impurities, kill harmful bacteria, eliminate taste and odors and help prevent tooth decay. The treatment process takes about 18 hours. During that time, more than 200 tests are conducted on the water.

Water can be very safe to drink and still have an unpleasant taste and odor. These are aesthetic qualities in our water and do not affect our health. Occasionally, water systems experience taste and odor problems often caused by such things as algae growth, a change of temperature or high rainfall.



The Water Treatment Process



Frequent Questions on Water Quality

How does Corpus Christi's water system rate?

Corpus Christi has a 20 year track record of meeting all federal, state and local standards and has received the highest possible "Superior" rating by the Texas Natural Resource Conservation Commission.

What are Cryptosporidium and Giardia?

Cryptosporidium and Giardia are microscopic parasites that affect the digestive tracts of humans and animals. Corpus Christi has tested for Cryptosporidium and Giardia in both untreated river water and in treated water during 1999 and, the parasites were never detected.

What are some of the minerals, metals and other constituents found in our raw water?

Raw water has constituents that come from minerals and metals, which remain in the water even after treatment. During 1999, TNRCC tested for the constituents listed below. Special groups may be interested in the following information. They do not relate to public health, but are important to the aesthetic quality of our water.

Constituent	Value
Bicarbonate	172 ppm
Calcium	60 ppm
Dilute Conductance	750 umho/cm
pH	7.8
Sodium	67 ppm
Total Alkalinity	141 ppm
Total Hardness	182 ppm or 10.6 grains per gallon

What are coliforms?

In the water industry, coliform bacteria are used as an indicator of microbial contamination of drinking water because it is easily detected and is found in the digestive tract of warm-blooded animals. While not themselves disease producers, 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 safe for human consumption. Fecal coliform (mostly E-coli), is part of the coliform bacteria group originating in the intestinal tract of warm-blooded animals that passes into the environment as feces. Fecal coliform is often used as an indicator of fecal contamination of a domestic water supply.

Does turbidity have any health effects?

Turbidity has no health effects; however, turbidity can interfere with disinfection and provide a medium for microbial growth. It may indicate the presence of disease-causing organisms which may include bacteria, viruses and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches. Turbidity must be less than 0.5 NTU in 95 % of the monthly water samples.

What causes taste and odor in my drinking water?

Hot South Texas summer weather results in a rapid algae growth in our surface water reservoirs. When the problem is detected, it is controlled by using potassium permanganate at the water treatment plant. In as much as taste and odor are sometimes apparent, the water is safe to drink.

Why does chilled tap water taste better than water straight from the tap?

Water that is refrigerated overnight in a sealed container does taste better as it has been given time to settle. We recommend keeping a jug of water at all times in the refrigerator. This also gives you the benefit of always having a cool drink of water.

Do we have hard water?

Hard water is defined by the amount of calcium and magnesium present in the water. Hard water has a relatively high level as compared to soft water which has a low level. Corpus Christi 's drinking water is considered moderately hard. Testing conducted in 1999 showed a total hardness of 182 milligrams per liter or about 10.6 grains per gallon.

Is fluoride added to Corpus Christi's drinking water?

Fluoride, which is a substance added to reduce cavities, is added to our water. The American Dental Association recommends a concentration of 1 part per million. Bottled water may or may not contain fluoride. Corpus Christi's drinking water has a fluoride value of 0.7 parts per million (ppm) with a targeted average of 0.80 ppm.

Why does my water seem cloudy?

Water that is cloudy is often the result of air which is trapped in the water. 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 problem to the Water Department dispatcher at 857-1888.

Is my water safer with water purification devices?

Water from the Corpus Christi water supply is safe to drink. We recognize that it is your personal choice to purchase water purification devices. At the same time, purification devices have been known to cause problems in the quality of drinking water due to the lack of proper filter replacement. These devices are not tested or regulated by the state or federal government.

Is chlorine a safe disinfectant for drinking water?

Corpus Christi uses chlorine to disinfect our drinking water. Chlorine has been used in municipal water treatment since 1908 and is the most effective way to ensure that water stays disinfected as it travels through our distribution system.

Water Quality Monitoring Results

The City of Corpus Christi is pleased to provide the following information on the quality of our drinking water. The following table shows that our water quality values were below allowable limits set the U. S. Environmental Protection Agency and the Texas Natural Resource Conservation Commission. U. S. EPA requires water systems to tests up to 97 constituents.

Regulated Constituents

Inorganic Constituent	Corpus Christi's Water Results Average	Range [1]	USEPA Regulations Maximum Contaminant Level	Maximum Contaminant Level Goal	Source of Constituent
1999 Barium (ppm)	0.092	0.092 - 0.092	2	2	Discharge of drilling wastes or from metal refineries; erosion of natural deposits.
1999 Fluoride (ppm)	0.7	0.700- 0.700	4	4	Water additive which promotes strong teeth; erosion of natural deposits.
1999 Nitrate (ppm)	0.28	0.280 -0. 280	10	10	Runoff from fertilizer use; erosion of natural deposits; leaching from septic tanks.
1997 Nitrite (ppm)	0.04	0.0400- 0.040	1	1	Runoff from fertilizer use; erosion of natural deposits.
1999 Selenium (ppb)	2.3	2.30 - 2.30	50	50	Discharge from petroleum and metal refineries. erosion of natural deposits.
1999 Gross beta emitters (pCi/L) [2]	5.5	5.50 - 5.50	50	0	Decay of natural and man-made deposits.
THM					**Source of Constituent**
1999 Total Trihalomethanes (ppb)	37.63 [3]	22.3 - 54.1	100	0	By-product of drinking water chlorination.
Unregulated Contaminants					**Source of Constituent**
1999 Bromoform (ppb)	7.35	0.60 - 10.0	N/A	N/A	Unregulated contaminant monitoring helps EPA to determine where certain contaminants occur and whether it needs to be regulate those contaminants.
1999 Bromodichloromethane (ppb)	8.68	5.30 - 12.0	N/A	N/A	
1999 Chloroform (ppb)	4.3	3.80 - 5.10	N/A	N/A	
1999 Chlorodibromomethane (ppb)	11.13	2.50 - 16. 0	N/A	N/A	

Turbidity	Highest Single Measurement	Lowest Monthly % of Samples Meeting Limits	Turbidity Levels	Source of Constituent
1999 Turbidity (NTU)	1.40	95.70	TT/ AL =0.5	Soil runoff.

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.

Lead and Copper	The 90th Percentile	Number of Sites Exceeding Action Level	Action Level	Source of Constituent
1999 Copper (ppm)	0.053	0	1.3	Corrosion of household plumbing system; erosion of natural deposits.
1999 Lead (ppb)	1.80	0	15	Corrosion of household plumbing systems; erosion of natural deposits.

Total Coliform	Highest Monthly % of Positive Samples	MCL	Unit of Measure	Source of Constituent
1999 Total Coliform Bacteria	0.77	*	Presence	Naturally present in the environment.

* Presence of coliform bacteria in 5% or more of the monthly samples. See explanation of coliforms in Frequently Asked Questions on Water Quality.

(1) Range of detected levels, indicated for one or more samples collected in 1999.
(2) 50 pCi/L = 4 mrems / year
(3) Average of four quarterly water samples collected in the distribution system.

Review of Terms

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

Maximum Contaminant Level (MCL) - 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.

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.

mrem/year - Millerems per year (measurement of radiation absorbed by the body).

Nephelometric Turbidity Units (NTU) - Measure of turbidity in water.

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

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.

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

Turbidity - A measure of the clarity of drinking water. The lower the turbidity, the better.