

Dear Water Customers,

The Corpus Christi Water Department is pleased to present its 2011 Annual Water Quality Report in accordance with the United States Environmental Protection Agency (EPA) National Primary Drinking Water Regulations, 40 CFR Part 141 Subpart O, which requires 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 which are located 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.

City of Corpus Christi Reservoir System



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. This water supply 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>.



IMPORTANT HEALTH INFORMATION

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* 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 361-826-1681 para hablar con una persona bilingüe en español o visite www.cctexas.com/water.

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 method 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.



Photo courtesy of Nueces River Authority

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.

Know More About the Source of Your Drinking Water

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 River supplies water to the Choke Canyon Reservoir. Water from Lake Texana is transported through the 101 mile-long Mary Rhodes Pipeline. Drinking water is produced at the O. N. Stevens Water Treatment Plant.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and aquifers. 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 picks up substances resulting from the presence of animals or from human/industrial activity. Contaminants that may be present in a water source before treatment include: microbes, inorganic contaminants, pesticides, radioactive contaminants and organic chemical contaminants.

A Source Water Susceptibility Assessment of our drinking water sources is available on the Texas Drinking Water Watch website. To view, please visit: <http://dww.tceq.texas.gov/DWW/>. The report describes the susceptibility and types of constituents that may come in contact with our water supply source based on human activities and natural conditions.

Want to Know More About Your Water?

For more information on the quality of your drinking water, visit our website at www.cctexas.com/water/quality and check out our "Guide to Common Water Quality Concerns" informational link on the left side of the webpage.



"Like" us on Facebook to receive information on upcoming events, major line breaks, water quality information, and more!
www.facebook.com/ccwaterquality

Or call our water hotline at 361-826-1600 to speak with someone.

Get a FREE 17 Ounce Water Bottle JUST FOR ATTENDING!

The City of Corpus Christi Water Department (CCWD) will hold a meeting to discuss the contents of the 2011 Annual Water Quality Report. Attendees will receive a free 17 ounce water bottle. The meeting will be held on June 21, 2012 at 6:00 p.m. The Water Utilities Building is 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. Water bottles are limited to one per adult customer.



Scale Deposits on Dishware

Dish detergents have opted to remove phosphates from their products because the American Cleaning Council, a manufacturer's trade group representing most detergent companies, issued a voluntary ban on phosphates in July of 2010. Since then, we have received customer concerns regarding the build up of scale deposits or a film/haze on dishware. Phosphates used to prevent food, grease, and minerals in the water from being reattached during the wash cycle. Visit www.cctexas.com/water/quality and click on the Guide to Common Water Quality Concerns for more information and solutions to this issue.



2011 Annual Water Quality Report



Corpus Christi
Water Department

A Superior Rated Water System

PWS ID: TX1780003

2011 Drinking Water Quality Report

Our drinking water is regulated by the Texas Commission on Environmental Quality (TCEQ). The information that follows lists all of the federally regulated or monitored contaminants which have been found in our drinking water. The U.S. EPA required 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 contamination 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. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Most Probable Number (MPN)

Nephelometric Turbidity Units (NTU) – A measure of turbidity in water.

pico-curles 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.

INORGANIC CONTAMINANTS

| Year/Constituent | Average | Range | MCL | MCLG | Likely Source of Contaminant |
|----------------------------------|---------|---------------|-----|------|--|
| 2011 Barium (ppm) | 0.125 | 0.125 - 0.125 | 2 | 2 | Discharge of drilling waste, erosion of natural deposits |
| 2011 Fluoride (ppm) | 0.32 | 0.32 - 0.32 | 4 | 4 | Erosion of natural deposits, water additive |
| 2011 Nitrate (ppm) | 0.18 | 0.18 - 0.18 | 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 |
| 2011 Selenium (ppb) | 0.67 | NA | 50 | 50 | Erosion of natural deposits |

DISINFECTION BYPRODUCTS

| | | | | | |
|-----------------------------------|------|-------------|----|----|---|
| 2011 Total Trihalomethanes (ppb) | 58.4 | 49.1 - 75.1 | 80 | NA | By-product of drinking water disinfection |
| 2011 Total Haloacetic Acids (ppb) | 18.7 | 7.4 - 36.7 | 60 | NA | By-product of drinking water disinfection |

TOTAL ORGANIC CARBON

| | | | | | |
|---|------|-------------|----|----|--------------------------------------|
| 2011 Source Water (ppm) | 6.69 | 5.98 - 8.02 | NA | NA | Naturally present in the environment |
| 2011 Plant 1 (ppm) | 4.92 | 3.93 - 6.10 | NA | NA | Naturally present in the environment |
| 2011 Plant 2 (ppm) | 4.78 | 3.71 - 6.23 | NA | NA | Naturally present in the environment |
| 2011 Plant 1 Removal Ratio (% removal*) | 1.08 | 0.86 - 1.26 | NA | NA | Naturally present in the environment |
| 2011 Plant 2 Removal Ratio (% removal*) | 1.16 | 0.85 - 1.58 | NA | NA | Naturally present in the environment |

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 removed by the treatment process divided by the percent of TOC required by TCEQ to be removed.

UNREGULATED CONTAMINANTS

| | | | | | |
|---------------------------------|-------|---------------|----|----|---|
| 2011 Bromodichloromethane (ppb) | 11.33 | 11.33 - 11.33 | NA | NA | By-product of drinking water disinfection |
| 2011 Chloroform (ppb) | 4.38 | 4.38 - 4.38 | NA | NA | By-product of drinking water disinfection |
| 2011 Dibromochloromethane (ppb) | 15.01 | 15.01 - 15.01 | NA | NA | By-product of drinking water disinfection |
| 2011 Bromoform (ppb) | 11.45 | 11.45 - 11.45 | NA | NA | By-product of drinking water disinfection |

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.

TURBIDITY

| Year/Constituent | Highest Single Measurement | Lowest % of Samples Meeting Limits | Entry Point MCL | Single Measurement MCL | Likely Source of Contaminant |
|--------------------|----------------------------|------------------------------------|-----------------|------------------------|------------------------------|
| 2011 Plant 1 (NTU) | 0.19 | 100 | ≤0.3 | 1.0 | Soil runoff |
| 2011 Plant 2 (NTU) | 0.23 | 100 | ≤0.3 | 1.0 | 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.

MICROBIOLOGICAL CONTAMINANTS

| Year/Constituent | Highest Monthly % of Positive Samples | Unit of Measurement | MCL | Likely Source of Contaminant |
|--|---------------------------------------|---------------------|-----|--------------------------------------|
| 2011 Total Coliform Bacteria | 0.5 | Presence | ** | Naturally present in the environment |
| 2011 Fecal Coliform and <i>E. coli</i> | 0.0 | Presence | *** | Naturally present in the environment |

**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.

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 household plumbing systems. Erosion of natural deposits. |
| 2009 Copper (ppm) | 0.123 | 0 | 1.3 | |

MAXIMUM RESIDUAL DISINFECTANT

| Year/Constituent | Average | Range | MCL | MCLG | Likely Source of Contaminant |
|------------------------|---------|-------------|-----|------|---------------------------------------|
| 2011 Chloramines (ppm) | 2.58 | 2.30 - 3.00 | 4.0 | <4.0 | Disinfectant used to control microbes |

UNREGULATED CONTAMINANT MONITORING RULE 2 (UCMR2)

| Year/Screening Survey List 2 | Average | Range | MCL | Likely Source of Contaminant |
|---|---------|-----------------|-----|--|
| 2009 Nitrosamines (ppm) N-Nitrosodimethylamine (NDMA) | 0.0069 | 0.0023 - 0.0147 | NA | Naturally found in water or form when disinfectant is added for treatment. |

SECONDARY AND OTHER CONSTITUENTS – Not Associated with Adverse Health Effects

Many constituents, such as calcium, sodium, or irons, 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 | MCL | Likely Source of Contaminant |
|--|---------|---------------|-------------|--|
| 2011 Aluminum (ppm) | 0.034 | 0.034 - 0.034 | 0.05 to 0.2 | Abundant naturally occurring element |
| 2011 Bicarbonate (ppm) | 122 | 122 - 122 | NA | Corrosion of carbonate rocks such as limestone |
| 2011 Calcium (ppm) | 72.9 | 72.9 - 72.9 | NA | Abundant naturally occurring element |
| 2011 Chloride (ppm) | 191 | 191 - 191 | 300 | Abundant naturally occurring element; used in water purification |
| 2011 Copper (ppm) | 0.002 | 0.002 - 0.002 | 1.0 | Corrosion of household plumbing systems; erosion of natural deposits |
| 2011 Hardness as Ca/Mg (ppm) | 231 | 231 - 231 | NA | Naturally occurring calcium and magnesium |
| 2011 Magnesium (ppm) | 11.8 | 11.8 - 11.8 | NA | Abundant naturally occurring element |
| 2011 Manganese (ppm) | 0.005 | 0.005 - 0.005 | 0.05 | Abundant naturally occurring element |
| 2011 Nickel (ppm) | 0.001 | 0.001 - 0.001 | NA | Erosion of natural deposits |
| 2011 pH | 7.9 | 7.9 - 7.9 | >7.0 | Measure of corrosivity of water |
| 2011 Sodium (ppm) | 118 | 118 - 118 | NA | Erosion of natural deposits; oil field by-product |
| 2011 Sulfate (ppm) | 77.6 | 77.6 - 77.6 | 300 | Natural occurring; oil field by-product |
| 2011 Total Alkalinity (ppm) as CaCO ₃ | 122 | 122 - 122 | NA | Naturally occurring soluble mineral salts |
| 2011 Total Dissolved Solids (ppm) | 587 | 587 - 587 | 1000 | Total dissolved mineral constituents in water |