



Dept. of Public Works
City of Galveston
P.O. Box 779
Galveston, TX 77553-0779

PRSRT STD
ECRWSS
U.S. POSTAGE
PAID
EDDM PERMIT #17

City of Galveston
Water Quality Report 2012
For the Year Ending 12/31/11

Please deliver to:

LOCAL POSTAGE CUSTOMER

City of Galveston



Assistant City Manager

Infrastructure, Development & Construction Management

P.O. Box 779 / Galveston, Texas 77553

June 2012

Dear Galveston Municipal Utilities Customer:

This document represents the annual water quality report for the City of Galveston's Water System. This is sent to you annually as a requirement of the Federal Safe Drinking Water Act. The Mayor, City Council, and City Staff work every day to make sure that you are getting the quality water system that you expect and deserve.

The City receives its raw water supply from the Brazos River, which is then treated at the Thomas Mackey Water Treatment Plant. The treatment plant is capable of supplying Galveston with approximately 21 Million Gallons of Water per Day. In addition, the City maintains water wells on the Mainland for the purpose of addressing our peak or emergency water usage needs. The City is also exploring various options for increasing our supply of water, including expansion of the existing water treatment plant, supplementing our well capacity, or perhaps even desalination of seawater.

The construction has recently been completed on two new elevated water storage tanks, each storing two million gallons of water. One of the tanks is located in Jamaica Beach the other is located near Isla Del Sol. Both of these projects were funded by American Recovery and Restoration Act (stimulus) funds.

As part of the City's continued Hurricane Ike recovery process there are several projects in various stages of design and/or construction. Construction has begun on a water transmission main between the 30th and 59th Street Pump Stations. This project will allow either of the pump stations to provide water to the other's respective service area. Design of a new 59th Street Pump Station will begin by the end of the summer. This new facility will be built to withstand a category 5 event, further insuring the sustainability of our water infrastructure and the expedited return of our residents post event. The design is nearing completion on two additional 7.5 million gallon ground storage tanks to be constructed at 30th Street and Market. The City will also participate in the hardening of the Thomas Mackey Water Treatment Plant to ensure its functionality as well.

Continuing to serve your water needs is one of our primary duties at the City, and my staff and I take this duty very seriously. Please send your comments to the return address on this report, or email to publicworks@cityofgalveston.org. I will be pleased to receive them.

Sincerely,

Eric K. Wilson
Assistant City Manager

City of Galveston

2012 Drinking Water Quality Report

City of Galveston Municipal Utilities Department

Customer Service (409) 797-3550

Main Office (409) 797-3630

Special Notice

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 providers. Additional guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline (800 – 426 – 4791).

Public Participation Opportunities

There are many opportunities available to learn more about the City of Galveston's Municipal Utilities Department and water quality. For inquiries, questions or concerns about water quality, public participation, policy decisions or to request a speaker for your group, call (409) 797-3630.

The Municipal Utilities Department is part of the city government. All legislative, policy, and budgetary decisions for the department are made by the City Council. City Council meets on the second and fourth Thursday of every month at 4:00 p.m. at 823 Rosenberg.

Internet access to the City of Galveston is:
<http://www.cityofgalveston.org>

OUR DRINKING WATER IS REGULATED

This Report is a summary of the quality of the water we provide our customers. The analysis was made by using the data from the most recent U.S. Environmental Protection Agency (EPA) required tests and is presented in the attached pages. We hope this information helps you become more knowledgeable about what's in your drinking water.

Source of Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. 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 can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water before treatment include:

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also, come from gas station, urban storm water runoff, and septic systems.

Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

En Espanol

Este reporte incluye informacion importante sobre el agua para tomar. Si tiene preguntas o discusiones sobre este reporte en espanol, favor de llamar al tel. (409) 797-3630 par hablar con una persona bilingue en Espanol.

Where do we get our Water?

In September of 2001, the City of Galveston started to receive its water supply from the Gulf Coast Water Authority's Thomas A. Mackey Water Treatment Plant in Texas City. The Gulf Coast Water Authority (GCWA) owns 212 million gallons per day in water rights from the Brazos River and provides water for agriculture, industry and municipal use. All water travels through 150 miles of canals stretching from the Brazos River, across Fort Bend, Brazoria and Galveston Counties to the GCWA's raw water reservoir located near Highway 146 in Texas City.

A Source Water Susceptibility Assessment for you drinking water sources is currently being updated by the Texas Commission on Environmental Quality. This information describes the susceptibility and types of constituents that may come into contact with you drinking water source based on human activities and natural conditions. The information contained in the assessment allows us to focus our source water protection strategies. Some of this source water assessment information will be available later this year on Texas Drinking Water Watch at <http://dww.tceq.state.tx.us/DWW/>. For more information on source water assessments and protection efforts at our system, please contact us.

Required Additional Health Information for 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 you 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>.

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 these contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects may be obtained by calling EPA's Safe Drinking Water Hotline (1-800-426-4791).

Secondary Constituents

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 EPA. 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.

United States Environmental Protection Agency
<http://www.epa.gov/safewater>

Texas Department of Health
<http://www.tdh.texas.gov>

About The following Pages

The pages that follow list all of the federally regulated or monitored contaminants which have been found in your drinking water. The U.S. EPA requires water systems to test for up to 97 contaminants.

Abbreviations/Definitions:

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 Contaminant Level – MCL - The highest permissible level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Treatment Technique – A required process intended to reduce the level of a contaminant in drinking water.

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

Turbidity - A measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

NTU – Nephelometric Turbidity Units - This is the unit used to measure water turbidity.

MFL - Million fibers per liter - A measure of asbestos.

pCi/L - Picocuries per liter - A measurement of radioactivity in water.

ppm - Parts per million - One part per million, or milligrams per liter (mg/l).

ppb - Parts per billion - One part per billion, or micrograms per liter.

ppt - Parts per trillion - One part per trillion, or nanograms per liter.

ppq - Parts per quadrillion - One part per quadrillion, or picograms per liter.

Inorganic Contaminants

| Year (Range) | Contaminant | Average Level | Minimum Level | Maximum Level | MCL | MCLG | Unit of Measure | Source of Contaminant |
|--------------|---------------------|---------------|---------------|---------------|-----|------|-----------------|--|
| 2007 | Barium | 0.088 | 0.088 | 0.088 | 2 | 2 | ppm | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits. |
| 2011 | Fluoride | 0.68 | 0.68 | 0.68 | 4 | 4 | ppm | Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories. |
| 2011 | Nitrate | 0.14 | 0.14 | 0.14 | 10 | 10 | ppm | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits. |
| 2006 | Gross beta emitters | 6.2 | 6.2 | 6.2 | 50 | 0 | pCi/L | Decay of natural and man-made deposits. |

Organic Contaminants

| Year | Contaminant | Highest Average | Minimum Level | Maximum Level | MCL | MCLG | Unit of Measure | Source of Contaminant |
|------|-------------|-----------------|---------------|---------------|-----|------|-----------------|--|
| 2011 | Simazine | 0.21 | 0.21 | 0.21 | 4 | 4 | ppb | Herbicide runoff. |
| 2011 | Atrazine | 0.21 | 0.21 | 0.21 | 3 | 3 | ppb | Runoff from herbicide used on row crops. |

Disinfection Byproducts

| Year (Range) | Contaminant | Average Level | Minimum Level | Maximum Level | MCL | Unit of Measure | Source of Contaminant |
|--------------|------------------------|---------------|---------------|---------------|-----|-----------------|---|
| 2011 | Total Haloacetic Acids | 15.0 | 7.7 | 19.8 | 60 | ppb | Byproduct of drinking water disinfection. |
| 2011 | Total Trihalomethanes | 71.3 | 38.4 | 97.4 | 80 | ppb | Byproduct of drinking water disinfection. |

Health Information about Trihalomethanes (TTHM)

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Unregulated Contaminants

| Bromoform, chloroform, bromodichloromethane, and dibromochloromethane are disinfection byproducts. There is no maximum contaminat level for these chemicals at the entry point to distribution. | | | | | | | |
|---|----------------------|---------------|---------------|---------------|-----------------|---|--|
| Year | Contaminant | Average Level | Minimum Level | Maximum Level | Unit of Measure | Source of Contaminant | |
| 2011 | Chloroform | 3.0 | 2.3 | 3.8 | ppb | Byproduct of drinking water disinfection. | |
| 2011 | Bromoform | 23.3 | 12.2 | 33.2 | ppb | Byproduct of drinking water disinfection. | |
| 2011 | Bromodichloromethane | 11.8 | 8.5 | 16.2 | ppb | Byproduct of drinking water disinfection. | |
| 2011 | Dibromochloromethane | 28.6 | 17.9 | 41.0 | ppb | Byproduct of drinking water disinfection. | |

Lead and Copper

| Year | Contaminant | The 90th Percentile | Number of Sites Exceeding Action Level | Action Level | Unit of Measure | Source of Contaminant |
|------|-------------|---------------------|--|--------------|-----------------|---|
| 2009 | Lead | 1.6000 | 0 | 15 | ppb | Corrosion of household plumbing systems; erosion of natural deposits. |
| 2009 | Copper | 0.0290 | 0 | 1.3 | ppm | Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives. |

Recommended Additional Health Information for 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 <https://www.epa.gov/safewater/lead>.

Turbidity

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 | Contaminant | Highest Single Measurement | Lowest Monthly % of Samples Meeting Limits | Turbidity Limits | Unit of Measure | Source of Contaminant |
|------|-------------|----------------------------|--|------------------|-----------------|-----------------------|
| 2011 | Turbidity | 0.63 | 95.5 | 0.3 | NTU | Soil runoff. |

COLIFORMS

What are coliforms?

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 harder than many disease-causing organisms; therefore, their absence from water is a good indication that the water is microbiologically safe for human consumption. Fecal coliform bacteria and, 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. The following table indicates whether total coliform or fecal coliform bacteria were found in the monthly drinking water samples submitted for testing by your water supplier last year.

Coliform Bacteria

| Maximum Contaminant Level Goal | Total Coliform Maximum Contaminant Level | Highest No. of Positive | Fecal Coliform or <i>E. Coli</i> Maximum Contaminant Level | Total No. of Positive <i>E. Coli</i> or Fecal Coliform Samples | Violation | Likely Source of Contamination |
|--------------------------------|--|-------------------------|--|--|-----------|--------------------------------------|
| 0 | 5% of monthly samples are positive | 0 | 0 | 0 | No | Naturally present in the environment |

Maximum Residual Disinfectant Level

| Year | Disinfectant | Average Level | Minimum Level | Maximum Level | MRDL | MRDLG | Units | Source |
|------|--------------|---------------|---------------|---------------|------|-------|-------|---------------------------------------|
| 2011 | Chloramines | 2.00 | 0.90 | 3.50 | 4.0 | 4.0 | ppm | Disinfectant used to control microbes |

Secondary and Other Not Regulated Constituents

(No associated adverse health effects)

| Year (Range) | Constituent | Average Level | Minimum Level | Maximum Level | Limit | Unit of Measure | Source of Constituent |
|--------------|---------------------------------------|---------------|---------------|---------------|-------|-----------------|---|
| 2011 | Bicarbonate | 167 | 167 | 167 | NA | ppm | Corrosion of carbonate rocks such as limestone. |
| 2007 | Calcium | 38.9 | 38.9 | 38.9 | NA | ppm | Abundant naturally occurring element. |
| 2011 | Chloride | 131 | 131 | 131 | 300 | ppm | Abundant naturally occurring element; used in water purification; byproduct of oil field activity |
| 2009 | Copper | 0.029 | 0.029 | 0.029 | 1 | ppm | Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives. |
| 2007 | Magnesium | 8.7 | 8.7 | 8.7 | NA | ppm | Abundant naturally occurring element. |
| 2007 | Nickel | 0.002 | 0.002 | 0.002 | NA | ppm | Erosion of natural deposits. |
| 2011 | pH | 7.5 | 7.5 | 7.5 | >7.0 | units | Measure of corrosivity of water. |
| 2011 | Sodium | 92.5 | 92.5 | 92.5 | NA | ppm | Erosion of natural deposits; byproduct of oil field activity. |
| 2011 | Sulfate | 74 | 74 | 74 | 300 | ppm | Naturally occurring; common industrial byproduct; byproduct of oil field activity. |
| 2011 | Total Alkalinity as CaCO ₃ | 137 | 137 | 137 | NA | ppm | Naturally occurring soluble mineral salts. |
| 2011 | Total Dissolved Solids | 479 | 479 | 479 | 1000 | ppm | Total dissolved mineral constituents in water. |
| 2007 | Total Hardness as CaCO ₃ | 133 | 133 | 133 | NA | ppm | Naturally occurring calcium. |
| 2007 | Zinc | 0.165 | 0.165 | 0.165 | 5 | Ppm | Moderately abundant naturally occurring element; used in the metal industry. |