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

City of Galveston
Water Quality Report 2009
For the Year Ending 12/31/08

City of Galveston

Public Works Department
P.O. Box 779 / Galveston, Texas 77553

July 2009

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 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.

Prior to Hurricane Ike, the City began work on a new major pump station to replace the 30th Street Pump Station at a cost of approximately $16 Million. The new pump station is expected to be completed in late 2009, and will provide reliable water pressure from the Far East End of the Island to approximately 51st Street. The City has already begun converting the existing 120 year old pump station into office space for the Municipal Utilities staff, and it is planned to continue that conversion to work space once the new pump station is completed.

On June 11, 2009, the Galveston City Council approved the expenditure of just under $107 Million in Federal Hurricane Ike Disaster Recovery Funding (CDBG) of which $39 Million is earmarked for various water system reliability projects for the entire Island. These improvements are scheduled to be completed by the end of 2011. These projects will provide for day-to-day water needs, and also will be designed to survive significant hurricane damage.

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 received them.

Sincerely,

Brandon E. Wade
Deputy City Manager

City of Galveston
2008 Drinking Water Quality Report

City of Galveston Municipal Utilities Department Customer Service (409) 797-3550 Main Office (409) 797-3630

The Texas Commission on Environmental Quality (TCEQ) regulates our Drinking Water and they have assessed our system and determined that our water is safe to drink. The analysis was made using the data in the attached tables. Since your water meets federal standards, there may not be any health-based benefits to purchasing bottled water or point of use devices.

Providing safe and reliable drinking water is the highest priority for the City of Galveston Municipal Utilities Department. Our employees take pride in producing and delivering water to your tap that meets or is better than state and federal standards require.

This brochure is a summary of the quality of water provided to our customers. The information in this report is based on tests conducted during the past 2 years.

It is important to us that you have information about your drinking water, so you can have confidence in the product we deliver to you. Inside you will find a list of what is in the water and at what levels. There is also information on what is being done to keep your drinking water among the safest in the world.

The City of Galveston's drinking water meets or exceeds all Texas Commission on Environmental Quality and U.S. Environmental Protection Agency requirements.

This brochure is in compliance with Federal Regulations, Subpart O, Consumer Confidence Reporting, Chapter 141. The regulation requires all public water systems to deliver to its customer's drinking water quality standards by July 1, 2005, and yearly thereafter by July 1st.

We Welcome Your Comments: 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 5:30 p.m. at 823 Rosenberg.

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

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 devises.

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

En Espanol: Este reporte incluye informacion importante sobre el aqua para tomar. Si tiene preguntas o discusiones sobres 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.

The Thomas A. Mackey Water Treatment Plant currently serves the communities of Dickinson, Texas City, Kemah, La Marque, Bayview, San Leon and Bacliff. The Gulf Coast Water Authority has expanded their water treatment plant to a capacity of 50 million gallons per day to serve theses mainland communities and the City of Galveston. Public tours of the Mackey Water Treatment Plant are offered Monday thru Friday. For scheduling, please call (409) 948-6415.

The City of Galveston may supplement the surface water supply with well water from the Hitchcock, Santa Fe & Dickinson area. The Houston-Galveston Coastal Subsidence District allocates 540 million gallons per year of well water to the City of Galveston. The well water is used primarily during the summer months.

The TCEQ has completed a Source Water Susceptibility for all drinking water systems that own their sources. This report describes the susceptibility and types of constituents that may come into contact with the drinking water source based on human activities and natural conditions. The system(s) from which we purchase our water received the assessment report. For more information on source water assessments and protection efforts at our system contact the Gulf Coast Water Authority at 409-948-6415.

What's in the Water?

The water provided to your home travels over the surface of the land through streams, rivers and canals. This water may dissolve naturally occurring minerals and, in some cases, radioactive materials and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be found in untreated water include: microbial contaminants, such as viruses and bacteria; inorganic contaminants such as salts and metals; pesticides and herbicides; organic chemical contaminants from industrial processes and petroleum use; and radioactive contaminants.

In order to ensure that tap water is safe to drink, the United States Environmental Protection Agency and the Texas Commission on Environmental Quality establish regulations that limit the amount of certain contaminants in water provided by public water systems. The process of establishing contaminant levels includes scientific research of water quality issues conducted worldwide.

Special Information for the Elderly, Infants, Cancer Patients, People with HIV/Aids or other Immune Problems:

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. 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).

About The following Pages

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

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 – Nepholometric 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.
2008	Fluoride	0.25	0.25	0.25	4	4	ppm	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
2008	Nitrate	0.1	0.1	0.1	10	10	ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
2006	Gross beta emitters	4.2	4.2	4.2	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
2007	Atrazine	0.37	0.37	0.37	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
2008	Total Haloacetic Acids	17	9.7	31.4	60	ppb	Byproduct of drinking water disinfection.
2008	Total Trihalomethanes	52.4	35.2	80.5	80	ppb	Byproduct of drinking water disinfection.

Unregulated Initial Distribution System Evaluation for Disinfection Byproducts

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

Year	Contaminant	Average Level	Minimum Level	Maximum Level	MCL	Unit of Measure	Source of Contaminant
2007	Total Haloacetic Acids	20.2	9.9	62.9	NA	Ppb	Byproduct of drinking water disinfection
2007	Total Trihalomethane	50.8	33.4	155.2	NA	ppb	Byproduct of drinking water disinfection

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
2008	Chloroform	7.2	2.3	17.9	ppb	Byproduct of drinking water disinfection.
2008	Bromoform	10.3	1.9	28.2	ppb	Byproduct of drinking water disinfection.
2008	Bromodichloromethane	14.4	8.3	24.1	ppb	Byproduct of drinking water disinfection.
2008	Dibromochloromethane	20.5	14.1	34.6	ppb	Byproduct of drinking water disinfection.

Lead and Copper

Year (Range)		Contaminant	The 90th Percentile	Number of Sites Exceeding Action Level	Action Level	Unit of Measure	Source of Contaminant
2005	2005	Lead	1.4000	0	15	ppb	Corrosion of household plumbing systems; erosion of natural deposits.
2005	2005	Copper	0.0450	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
2007	Turbidity	0.40	98.3	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 hardier 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.

Total Coliform

During the month of September 2008 22 of the 65 regular bacteriological samples were taken as a result of the recovery from Hurricane Ike. Special bacteriological samples were take in late September and early October releasing the City from the boil water notice that was issued on September 13, 2008 as a result of water system failure caused by Hurricane Ike.

Year	Contaminant	Highest Monthly % of Positive Samples	MCL	Unit of Measure	Source of Contaminant
2008	Total Coliform Bacteria	0	*	Presence	Naturally present in the environment.

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

Fecal Coliform REPORTED MONTHLY TESTS FOUND NO FECAL COLIFORM BACTERIA

Disinfectant Residuals

Violation: The disinfectant monitoring logs for the first quarter of 2008 were lost resulting in a monitoring violation.
Corrective Action: The standard operating procedures have been modified with computer logs and hard copies being copied and filed in separate locations.

Year	Disinfectant	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Units	Source
2008	Chlorine Residual, Chloramines	2.19	0.80	3.40	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
2008	Bicarbonate	163	163	163	NA	ppm	Corrosion of carbonate rocks such as limestone.
2007	Calcium	38.9	38.9	38.9	NA	ppm	Abundant naturally occurring element.
2008	Chloride	88	88	88	300	ppm	Abundant naturally occurring element; used in water purification; byproduct of oil field activity
2007	Copper	0.026	0.026	0.026	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.
2008	pH	7.4	7.4	7.4	NA	units	Measure of corrosivity of water.
2007	Sodium	49	49	49	NA	ppm	Erosion of natural deposits; byproduct of oil field activity.
2008	Sulfate	59	59	59	300	ppm	Naturally occurring; common industrial byproduct; byproduct of oil field activity.
2008	Total Alkalinity as CaCO3	134	134	134	NA	ppm	Naturally occurring soluble mineral salts.
2008	Total Dissolved Solids	359	359	359	1000	ppm	Total dissolved mineral constituents in water.
2007	Total Hardness as CaCO3	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.