# City of Gibraltar

# Water and Sewer Department

# 2010 Consumers Annual Report on Water Quality

# June 2011 - WQR No. 13

**ATTENTION: THIS IS AN IMPORTANT REPORT ON WATER QUALITY AND SAFETY**

### The City of Gibraltar is proud of the water it supplies and is honored to provide this report to you.

### The Detroit Water and Sewerage Department and the City of Gibraltar Water and Sewer Department want you to know your tap water is safe to drink and that it meets or surpasses all federal and state standards for quality and safety

The Detroit Water and Sewerage Department (DWSD) is proud of the fine drinking water it supplies and is honored to provide this report to you. The 2010 Consumers' Annual Report on Water Quality shows the source of our water, lists the results of our tests, and contains important information about water and health. We are pleased to show you how we have surpassed water quality standards as mandated by the Environmental Protection Agency (EPA) and the State of Michigan Department of the Environmental Quality (MDEQ).

## Detroit River Intakes

Your source water comes from the Detroit River, situated within the Lake St. Clair, Clinton River, Detroit River, Rouge River, Ecorse River, in the U.S. and parts of the Thames River, Little River, Turkey Creek and Sydenham watersheds in Canada. The Michigan Department of Environmental Quality in partnership with the U.S. Geological Survey, the Detroit Water and Sewerage Department, and the Michigan Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of potential contamination. The susceptibility rating is on a seven-tiered scale from “low to very high” based primarily on geologic sensitivity, water chemistry, and contaminant sources. The susceptibility of our Detroit River source water intakes were determined to be highly susceptible to potential contamination. However, all four Detroit water treatment plants that use source water from Detroit River have historically provided satisfactory treatment of this source water to meet drinking water standards. DWSD has initiated source-water protection activities that include chemical containment, spill response, and a mercury reduction program. DWSD participates in a National Pollutant Discharge Elimination System permit discharge program and has an emergency response management plan. If you would like to know more information about this report or a complete copy of this report please contact the City of Gibraltar Water Dept. at 734-676-3952.

## About Our System

The Detroit Water and Sewerage Department provides drinking water to approximately 4.2 million people in 126 southeastern Michigan communities, including the City of Gibraltar. The system uses water drawn from two intakes in the Detroit River; one to the north near the mouth of Lake St. Clair; and one to the south near Lake Erie. The water is directed to four (4) large water treatment plants for processing. A fifth water treatment plant located in St. Clair County uses surface water from Lake Huron. The City of Gibraltar receives water from the Southwest Treatment Plant.

## How Do We Know The Water Is Safe To Drink?

DWSD’s treatment facilities operate 24 hours a day, seven days a week. The treatment process begins with disinfecting the source water with chlorine to kill harmful microorganisms that can cause illness. Next, a chemical called Alum is mixed with the water to

remove the fine particles that make the water cloudy or turbid. Alum causes the particles to clump together and settle to the bottom. Fluoride is also added to protect our teeth from cavities and decay.

The water then flows through fine sand filters called beds. These filters remove even more particles and certain microorganisms that are resistant to chlorine. Finally, a small amount of phosphoric acid and chlorine are added to the treated water just before it leaves the treatment plant. The phosphoric acid helps control the lead that may dissolve in water from household plumbing systems. The chlorine keeps the water disinfected as it travels through water mains to reach your home.

In addition to a carefully controlled and monitored treatment process, the water is tested for a variety of substances before treatment, during various stages of treatment, and throughout the distribution system. Highly qualified, trained staff test hundreds of samples each week in DWSD's certified laboratories. Detroit water not only meets safety and health standards, but also ranks among the top 10 in the country for quality and value.

## Additional Information

To ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking water Hotline at 800-426-4791.

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 include:

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

**Inorganic contaminants**, such as 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 organics, which are by-products of industrial processes and petroleum production, and can also come from gas stations, 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.

In order to ensure that tap water is safe to drink, EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

## Important Health Information About Lead

Since 1992, with the cooperation of many Gibraltar residents, the City of Gibraltar and Detroit Water and Sewerage Department have been testing homes with plumbing systems that may contribute lead to the household water supply. Our latest round of testing showed no homes to have lead levels above the action level. If your home has a lead service line or piping that has lead soldered joints you can take the following precautions to minimize your exposure to lead that may have leached into your drinking water from your pipes.

-Run your water for 30 seconds to 2 minutes, or until it feels cold. This practice should be followed anytime your water has not been used for more than 6 hours.
-Always use cold water for drinking, cooking, or making baby formula.
-Use faucets and plumbing materials that are either lead free or will not leach unsafe levels of lead into your water.
**Additional information is available from the Safe Drinking Water Hotline (800) 426-4791.**

## People With Special Health Concerns

"Some people may be more vulnerable to contaminants in drinking water than is 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/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 1-(800-426-4791)."

## National Primary Drinking Water Regulation Compliance

The City of Gibraltar is proud to report that our system met all monitoring and reporting requirements for 2009**.**

## Cost Comparison

In Gibraltar, the tap water **costs $5.17* per 1000 gallons**. Bottled water ranges anywhere from **$1** to **$4 per gallon**.
* Sewage disposal fees are in addition to water usage.

## Opportunities for Public Participation

The DWSD Board of Water Commissioners meets the third Wednesday of each month. There are also public hearings and meetings open to the public. To confirm dates and times, or for information on other DWSD activities happening in the department please contact the DWSD Public Affairs at (313) 964-9571. The City of Gibraltar's Council Meetings are held the 2nd and 4$^{th}$ Monday of each month at 6:30 p.m. in the Council Chambers at the City of Gibraltar Municipal Complex, 29450 Munro, Gibraltar, MI.

The City of Gibraltar welcomes your comments and opinions about this report and will be happy to answer any questions you may have. Please direct your comments or questions to the Gibraltar Water and Sewer Department at (734) 676-3952.

## Other Monitoring

In addition to testing we are required to perform, our water system voluntarily tests for hundreds of additional substances and microscopic organisms to make certain our water is safe and of the highest quality. If you are interested in a more detailed report, contact the City of Gibraltar Water and Sewer Department at (734) 676-3952.

## Educational Information about Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women, infants and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Gibraltar 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 1-(800-426-4791) or at http://www.epa.gov/safewater/lead.

## 2009 Cryptosporidium Language

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S.  Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water. Cryptosporidium was detected once, during a twelve-month period at our Detroit River intake plants.  Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease.  Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

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# CITY OF GIBRALTAR

## 2010 Regulated Detected Contaminants Tables

| Contaminant | Test Date | Units | Health Goal MCLG | Allowed Level MCL | Level Detected | Range of Detection | Violation yes/no | Major Sources in Drinking Water |
|---|---|---|---|---|---|---|---|---|
| **Inorganic Chemicals – Annual Monitoring at Plant Finished Water Tap** | | | | | | | | |
| Fluoride | 9/20/10 | ppm | 4 | 4 | **1.11** | **0.63-1.11** | **no** | Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| Nitrate | 8/23//10 | ppm | 10 | 10 | **0.26** | **n/a** | **no** | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. |
| Barium | 6/9/2008 | ppm | 2 | 2 | **0.01** | **n/a** | **no** | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits. |
| **Disinfectant Residuals and Disinfection By-Products – Monitoring in Distribution System** | | | | | | | | |
| Total Trihalomethanes (TTHM) | Feb-Nov 2010 | ppb | n/a | 80 | **22.6** | **8.0-33.4** | **no** | By-product of drinking water chlorination. |
| Haloacetic Acids (HAA5) | Feb-Nov 2010 | ppb | n/a | 60 | **9.9** | **3.7-18.4** | **no** | By-product of drinking water disinfection. |
| Disinfectant (Total Chlorine) Residual) | Jan-Dec 2010 | ppm | MRDGL 4 | MRDL 4 | **0.63** | **0.49-0.79** | **no** | Water additive used to control microbes. |

| 2010 Turbidity – Monitored every 4 hours at Plant Finished Water Tap | | | |
|---|---|---|---|
| **Highest Single Measurement Cannot exceed 1 NTU** | **Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)** | **Violation yes/no** | **Major Sources in Drinking Water** |
| **0.26 NTU** | **100%** | **no** | Soil Runoff |
| Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system. | | | |

| 2010 Microbiological Contaminants – Monthly Monitoring in Distribution System | | | | | |
|---|---|---|---|---|---|
| **Contaminant** | **MCLG** | **MCL** | **Highest Number Detected** | **Violation yes/no** | **Major Sources in Drinking Water** |
| Total Coliform bacteria | 0 | Presence of Coliform bacteria > 5% of monthly samples | **In one month** 0 | NO | Naturally present in the environment. |
| E.coli *or fecal* coliform bacteria | 0 | A routine sample and a repeat sample are total coliform positive, and one is also fecal or E.coli positive. | **in entire year** 0 | NO | Human waste and animal fecal waste. |

| 2008 Lead and Copper Monitoring at Customers' Tap | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Contaminant | **Test Date** | **Units** | **Health Goal MCLG** | **Action Level AL** | **90th Percentile Value*** | **Number of Samples Over AL** | **Violation yes/no** | **Major Sources in Drinking Water** |
| Lead | 2008 | ppb | 0 | 15 | 6 ppb | 0 | **NO** | Corrosion of household plumbing system; Erosion of natural deposits. |
| Copper | 2008 | ppm | 1.3 | 1.3 | 0.06ppm | 0 | **NO** | Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives. |
| *The 90th percentile value means 90 percent of the homes tested have lead and copper levels below the given 90th percentile value. If the 90th percentile value is above the AL additional requirements must be met. | | | | | | | | |

| Regulated Contaminant | Treatment Technique | Running annual average | Monthly Ratio Range | Violation Yes/No | Typical Source of Contaminant |
|---|---|---|---|---|---|
| Total Organic Carbon (ppm) | The Total Organic Carbon (TOC) removal ratio is calculated as the ratio between the actual TOC removal and the TOC removal requirements. The TOC was measured each month and because the level was low, there is no requirement for TOC removal. | | | | Erosion of natural deposits |

**2010 Special Monitoring**

| Contaminant | MCLG | MCL | Level Detected | Source of Contamination |
|---|---|---|---|---|
| Sodium (ppm) | n/a | n/a | **4.80** | Erosion of natural deposits |

Information and tables provided by Detroit Water and Sewerage Department (DWSD) ML

## 2009 UNREGULATED CONTAMINANT MONITORING

Unregulated contaminants are those for which EPA has not established drinking water standards. Monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants. Beginning in July of 2008-April 2009, the Detroit Water and Sewerage Department (DWSD) began monitoring quarterly for unregulated contaminants under the Contaminant Monitoring Rule 2 (UCMR2.) All the UCMR2 contaminants monitored on List 1 and List 2 in 2008-2009 were undetected.

| Key to Detected Contaminants Tables | | |
|---|---|---|
| **Symbol** | **Abbreviation for** | **Definition/Explanation** |
| **MCLG** | Maximum Contaminant Level Goal | The level of contaminant in drinking water below which there is no known or expected risk to health. |
| **MCL** | Maximum Contaminant Level | The highest 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. |
| **MRDLG** | Maximum Residual Disinfectant Level Goal | 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. |
| **MRDL** | Maximum Residual Disinfectant Level | The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants. |
| **ppb** | Parts per billion (one in one billion) | The ppb is equivalent to micrograms per liter. A microgram = 1/1000 milligram. |
| **ppm** | Parts per million (one in one million) | The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram. |
| **NTU** | Nephelometric Turbidity Units | Measures the cloudiness of water. |
| **TT** | Treatment Technique | A required process intended to reduce the level of a contaminant in drinking water. |
| **AL** | Action Level | The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow. |
| **HAA5** | Haloacetic acids | HAA5 is the total of bromoacetic, chloracetic, dibromoacetic, dichloroacetic, and, trichloroacetic acids. Compliance is based on the total. |
| **TTHM** | Total Trihalomethanes | Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromochloromethane, and bromoform. Compliance is based on the total. |
| **pCi/l** | picocuries per liter | a measure of radioactivity |
| **n/a** | Not applicable | |
| **≤** | Greater than | |

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