



Ground water (also called well water) is protected from many of the sources of contamination described later, such as microbes like cryptosporidium. In general, the sources of drinking water (both tap and bottled water) may 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.



Source water can also be contaminated by substances resulting from animal or human activity. Contaminants include anything found in water. They are generally not harmful at low levels. Removing all contaminants would be extremely expensive and in nearly all cases would not

provide greater protection of health. Examples of contaminants that may be present in source water in general include: 1) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife. 2) 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. 3) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses. 4) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production which can also come from runoff and septic systems. 5) Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production or the mining process. In order 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. 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. The MHOG Sewer & Water Authority is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When you have not used your water 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>.

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MHOG Water Authority
4288 Norton Road
Howell, MI 48843

Important Information Enclosed
2012 Water Quality Report

MHOG Sewer & Water Authority

2012 Drinking Water Quality Report

DEAR CUSTOMER:



This report has been prepared to inform the customers of the Marion, Howell, Ocoola, Genoa (MHOG) Sewer & Water Authority of the quality of their drinking water.

Your drinking water complied with all Environmental Protection Agency (EPA) and Michigan drinking water health standards for the latest sampling period. Infants, some elderly or immune-compromised persons such as those undergoing chemotherapy; 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. If you are in one of the categories listed above you may be more



vulnerable than the general population to certain contaminants in drinking water. You should seek advice about drinking water from your physician or health care provider.

A geologic sensitivity analysis of the MHOG

Water Treatment Plant (WTP) production wells determined that the wells have "low" susceptibility to contamination. Copies of the susceptibility study may be obtained by contacting Alex Chimpouras at the phone number listed at the end of this page.

MHOG operators monitor your drinking water daily according to federal and state laws. The table on the next page shows the results of monitoring for the period from January 1 to December 31, 2012, unless otherwise noted. The test results show that your water meets or surpasses all federal and state requirements. For more information about your water call Alex Chimpouras at the MHOG WTP at 517.545.5098.



Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health. Drinking water (bottled or tap) may reasonably be expected to contain at least small amounts of some contaminants. The contaminants in our drinking water are primarily geological materials that dissolved while still in the aquifer. 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 (800.426.4791).

Contaminants may be found in drinking water that cause taste, color, or odor problems. These types of problems do not necessarily cause health concerns. For more information on taste, color, or odor of drinking water, please contact the MHOG WTP at 517.545.5098.

Este reporte incluye informacion importante sobre el agua para tomar. Si tiene preguntas o discusiones sobre este reporte en espanol, favor del llamar al tel. 281.579.4507 par hablar con una persona biligue en espanol.

Public input concerning the MHOG Water System may be made at regularly scheduled Board Meetings, held the third Wednesday of each month at the Oceola Township Hall, located at 1577 N. Latson Rd. Please call the Oceola Township Hall at 517.546.3259 for more information.



2012 Drinking Water Quality Report

The latest available information for the contaminants detected in our water during the sampling cycle ending in 2012 is given in the following table. The Environmental Protection Agency (EPA) does not require some contaminants to be monitored annually because their concentrations are not expected to vary. The Michigan Department of Environmental Quality (MDEQ) obtains and analyzes the samples in accordance with sampling cycles which vary according to EPA schedules. The definitions and abbreviations used in the table are listed below the results.

| Substance (units) | Sample Date | MCL | Level Detected | Range Detected | MCLG | In Compliance | Typical Sources |
|--|-------------|-----------------------|------------------|--------------------|---------|---------------|--|
| <u>Inorganic Contaminants</u> | | | | | | | |
| Chlorine Residual RAA (ppm) | 2012 | 4 MRDL | 0.68 | 0.23-1.17 | 4 MRDLG | Yes | Water chlorination |
| Chloride (ppm) | 2012 | N/A | 34 | 34 | N/A | Yes | Natural deposits |
| Hardness (ppm) | 2012 | N/A | 103 | 81-132 | N/A | Yes | Natural deposits |
| Sodium (ppm) | 2012 | N/A | 39 | 39 | N/A | Yes | Natural Erosion |
| Turbidity (NTU) | 2012 | N/A | 0.14 | 0.01-0.79 | N/A | Yes | Soil runoff |
| Iron (ppm) | 2012 | N/A | 0.01 | ND-0.09 | N/A | Yes | Natural Deposits |
| Fluoride (ppm) | 2012 | 4 | 0.93 | 0.40-1.33 | 4 | Yes | Natural deposits: additive to prevent tooth decay |
| Barium (ppm) | 2004 | 2 | 0.01 | 0.01 | 2 | Yes | Discharge of drilling wastes & metal refineries; natural erosion |
| <u>Radioactive Contaminants</u> | | | | | | | |
| Ra-226 (pCi/l) | 2003 | 5 | 1.58 | 1.58 | 0 | Yes | Decay of natural and manmade deposits |
| Ra-228 (pCi/l) | 2003 | 5 | 1.29 | 1.29 | 0 | Yes | Decay of natural and manmade deposits |
| <u>Disinfectant By-Products</u> | | | | | | | |
| Bromochloroacetic Acid (ppb) | 2012 | N/A | 2 | 2 | 0 | Yes | By-product of drinking water chlorination |
| Dibromoacetic Acid (ppb) | 2012 | N/A | 2 | 2 | 0 | Yes | By-product of drinking water chlorination |
| Dichloroacetic Acid (ppb) | 2012 | N/A | 6 | 6 | 0 | Yes | By-product of drinking water chlorination |
| Total Haloacetic Acids(five)(ppb) | 2012 | 60 | 8 | 8 | 0 | Yes | By-product of drinking water chlorination |
| Bromodichloromethane (ppb) | 2012 | 80 | 9.5 | 9.5 | 0 | Yes | By-product of drinking water chlorination |
| Bromoform (ppb) | 2012 | 80 | 5.4 | 5.4 | 0 | Yes | By-product of drinking water chlorination |
| Chlorodibromomethane (ppb) | 2012 | 80 | 12 | 12 | 0 | Yes | By-product of drinking water chlorination |
| Chloroform (ppb) | 2012 | 80 | 5.4 | 5.4 | 0 | Yes | By-product of drinking water chlorination |
| Total Trihalomethanes (ppb) | 2012 | 80 | 32.3 | 32.3 | 0 | Yes | By-product of drinking water chlorination |
| Substance (units) | Sample Date | 90th Percentile Value | EPA Action Level | Above Action Level | MCLG | In Compliance | Typical Source |
| <u>Lead and Copper</u> | | | | | | | |
| Lead (ppb) | 2012 | 1 | 15 | 0 | 0 | Yes | Corrosion of customer plumbing |
| Copper (ppm) | 2012 | 0.15 | 1.3 | 0 | 0 | Yes | Corrosion of customer plumbing |

No MCLs were exceeded. Levels detected were below MCLs.

Definitions & Abbreviations:

Maximum Contaminant Level Goal (MCLG): The level of contaminants 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 level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology.

Maximum residual disinfectant level (MRDL): 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.

Maximum residual disinfectant level goal (MRDLG): 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

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

Parts per million (ppm): The equivalent of milligrams per liter (mg/L) is analogous to 1 minute in 2 years.

Parts per billion (ppb): The equivalent of micrograms per liter (ug/L) is analogous to 1 second in 32 years.

Picocuries per liter (pCi/L): A measure of radioactivity. **RAA:** Running Annual Average. **N/A:** Not Applicable. **ND:** Not Detected

