

2012 WATER QUALITY DATA TABLE

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the 2012 calendar year. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Contaminants	Units	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Range Low High	Sample Date	Violation	Typical Sources
Disinfectants & Disinfection By-Products (There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.)								
Chlorine as Cl2	ppm	4	4	0.37	0.10 0.65	2012	NO	Water additive used to control microbes
Haloacetic Acids - HAA5	ppb	60	N/A	1.8	N/A N/A	2010 Next testing 2013	NO	By-product of drinking water chlorination.
TTHM - Total Trihalomethanes	ppb	80	N/A	14.0	N/A N/A	2010 Next testing 2013	NO	By-product of drinking water chlorination.
Inorganic Contaminants								
Arsenic	ppb	0	10	<1.0	N/A N/A	2012	NO	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Barium	ppm	2	2	0.04	N/A N/A	2006 Next testing 2015	NO	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (plant tap)	ppm	4	4	0.83	0.66 1.10	2012	NO	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Total Hardness (plant tap)	ppm	N/A	N/A	103.0	94.0 131.0	2012	NO	Natural Deposits
Iron (plant tap)	ppm	N/A	N/A	Not Detected	N/A N/A	2012	NO	Natural Deposits
Sodium (optional)	ppm	N/A	N/A	66.0	N/A N/A	2012	NO	Erosion of natural deposits; Leaching
Radioactive Contaminants								
Alpha Emitters	pCi/L	0	15	2.8	N/A N/A	2001 Next testing 2014	NO	Erosion of natural deposits.
Radium (combined 226/228)	pCi/L	0	5	0.3	N/A N/A	2001 Next testing 2014	NO	Erosion of natural deposits.
Contaminants	Units	MCLG	Action Level (AL)	Your Water	# Samples Exceeding AL	Sample Date	Exceeds AL	Typical Sources
Inorganic contaminants								
Copper - Homeowners Taps.	ppm	1.3	1.3 *	0.020	0	2010 Next testing 2013	NO	Corrosion of household plumbing systems. Erosion of natural deposits.
Lead - Homeowners Taps.	ppb	0	15 **	1.9	0	2010 Next testing 2013	NO	Corrosion of household plumbing systems. Erosion of natural deposits.
* Copper Action Level = 90 percentile or 9 out of 10 homes tested must show a concentration equal to or lower than 1.3 ppm.								
** Lead Action Level = 90 percentile or 9 out of 10 homes tested must show a concentration equal to or lower than 15 ppb.								

- MCLG = Maximum Contaminant Level Goal:** 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.
- MCL = Maximum Contaminant level:** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as feasible using the best available treatment technology.
- 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.
- ppb:** parts per billion, same as micrograms per liter (µg/L).
- ppm:** parts per million, same as milligrams per liter (mg/L).

- MRDLG = Maximum Residual Disinfection 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.
- MPL = Maximum Permissible Level:** State assigned level (example = Sodium)
- N/A:** Not applicable
- pCi/L:** picocuries per liter (a measure of radioactivity).
- ND or Not Detected:** Not detected
- NR:** Monitoring not required, but recommended.

City of Howell - Water Treatment Plant

2012 WATER QUALITY REPORT

Howell Water Treatment Plant, 150 Marion Street, Howell MI 48843

PH: (517) 546-5309 Fax: (517) 546-6019 Email = jwebster@ci.howell.mi.us

PUBLISHED

APRIL 2013

This report covers the drinking water quality for the City of Howell for the calendar year of 2012.

This information is a snapshot of the quality of the water that we provided to you in 2012. Included are details about where your water comes from, what it contains, and how it compares to U.S. Environmental Protection Agency (EPA) and State of Michigan Department of Environmental Quality (MDEQ) standards.

The staff at the City of Howell water treatment plant are highly dedicated to bringing you the best drinking water possible. We vigilantly safeguard the water supplies and once again we report that your tap water meets all water quality standards established by federal and state regulations and we have not violated any maximum contaminant levels (MCL).

Water Supply and Treatment:

The City of Howell is a ground water system. Water is drawn from deep rock wells (over 400 feet) taken from the Michigan formation and the deeper Marshall sandstone aquifer. Were a lime softening plant and add sulfuric acid for pH control, fluoride for the prevention of tooth decay, phosphate for corrosion control, and chlorine for disinfection. The City has a wellhead protection plan approved by the State in November 2001. The plan indicates that the ground water is considered to be moderate to low for possible contamination.

General Health Information:

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 (800-426-4791)**.

For People with Special Health Concerns:

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune systems 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 (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).

Sources of Drinking Water:

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Our water comes from 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 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 stormwater runoff and residential uses.
- Radioactive contaminants,** which can be naturally occurring or be the result of oil and gas production and mining activities.
- 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 stations, urban storm water runoff, and septic systems.

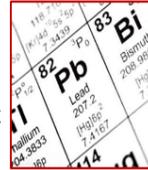
In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which provide the same protection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

Additional Information for Lead in Drinking Water:

The action level for lead in drinking water is 15 parts per billion (ppb) or 0.015 milligrams per liter (mg/L). The EPA requires Water Suppliers to take action to reduce lead levels if the 90th percentile sample taken is above the 15 ppb action level.

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 City of Howell 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 drinking water, you may wish to have your water tested.



NOTE: The City tests for lead & copper every 3 years, with the next scheduled testing to be done summer 2013. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (800-426-4791) or at www.epa.gov/safewater/lead.

Unregulated Contaminant Monitoring:

Unregulated contaminant monitoring helps EPA determine where certain contaminants occur and whether they need to regulate those contaminants. In September 1999, EPA revised the Unregulated Contaminant Monitoring Rule (UCMR) as required by the 1996 Amendments to the Safe Drinking Water Act. The data generated by the new UCMR will be used to evaluate and prioritize contaminants on the Drinking Water Contaminant Candidate List, a list of contaminants that EPA is considering for possible new drinking water standards. This will help to ensure that future decisions on drinking water standards are based on sound science.

- The City of Howell participated in this testing in September and December of 2001 and tested again in 2008.
- The EPA is soon expected to set a radon standard for drinking water at 300pCi/L (see definitions in table on back).
 - * **The City of Howell voluntarily tested for Radon in 2001 and our results were 80 pCi/L.**

WATER SYSTEM MAJOR PROJECTS: 2012

- **High Service Building Pipe works:** removed pipe foam, cleaned, painted pipe, installed dehumidifier.
- **Well Upgrades;** Installed new flow meter (Magmeters) in Well #6 & Well #7.
- **Installed** new fuel tank for DPS compound generator.
- **Installed** new On-Line Turbidimeter.



BEFORE: WITH FOAM



BEFORE: WITH FOAM



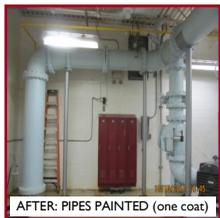
FOAM REMOVED



AFTER CLEANING

A Continued Work in Progress

... to improve our corrosion control program. All foam was removed on the high service building pipe works. They were then scraped & cleaned, then painted with epoxy paint. A tedious process. A dehumidifier was installed to keep the moisture down and prolong the life of the pipes. Another coat of paint is planned this year.



AFTER: PIPES PAINTED (one coat)



AFTER: PIPES PAINTED (one coat)



NEW DEHUMIDIFIER



NEW METER AT WELL #6



NEW METER (CLOSER VIEW)

Well Upgrades

Installed New flow meters (Magmeter) at Well # 6 & #7.

Fuel Tank & On-Line Turbidimeter

Installed a new fuel tank for the compound generator after original developed a leak.

New on-line turbidimeter installed.

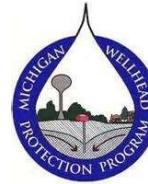


NEW FUEL TANK



NEW ON-LINE TURBIDIMETER

Wellhead Protection Program to be Updated:



Wellhead protection is a planning and management approach designed to protect public groundwater supply systems from contamination. The objective is to protect public water supply wells by controlling or managing all potential sources of contamination within a designated area surrounding the well or well field. An active wellhead protection program identifies areas that contribute water to public water supply wells, potential sources of contamination within those areas, and educates residents on developing best management practices that minimize threats to the public water supplies.

During the Fall of 2012, the City of Howell and the Marion, Howell, Oceola and Genoa Sewer & Water Authority (MHOG) were awarded a grant from the Michigan Department of Environmental Quality (MDEQ) for specified activities related to Wellhead Protection. The cooperative effort of working together will result in a cost savings to both the City and MHOG. AMEC Environment & Infrastructure Inc. (AMEC) and Hubbell, Roth & Clark, Inc. (HRC) will be our teaming partners for this work. As part of these activities, the City and MHOG will complete the following tasks which are integral to the ongoing efforts to protect the source water into the future:

- Due to changes in the number of production wells and pumping volumes, the Wellhead Protection (WHP) area delineation for the City and MHOG well field swath will be updated. This coordinated effort will ensure that the WHP delineation areas accurately reflect the current anticipated groundwater capture zone to allow the protection of the groundwater resource.
- Both the City and MHOG will update and revise their respective Wellhead Protection Plans (WHPPs). The WHPPs will be revised to include the updated WHP delineation area and will also include updates to all components.

We are excited to move forward with the continued protection of our local groundwater resource as it is our only source of drinking water in this area.

HOW CAN YOU GET INVOLVED?

City of Howell — City Council Meetings

All City Council meetings are held at Howell City Hall, 611 E. Grand River, Howell MI 48843 (517) 546-3502, Council Chambers, Lower Level. Note: Council meetings begin at 7:00 p.m.

2013 Meeting Dates = January 7 & 28; February 11 & 25; March 11 & 25; April 8 & 22; May 6 & 20; June 10 & 24; July 8 & 22; August 12 & 26; September 9 & 23; October 14 & 28; November 11 & 25; December 9 & 23.

Howell Citizens' Academy To sign up for Citizens' Academy = Contact Howell City Hall.

The seven-week program is an exciting way to learn about how our city is governed and to involve residents in community issues. Participants will visit various departments and facilities and experience local decision-making processes to help create a better understanding and a stronger partnership with the City. You will experience: Tours and discussion of Public Works, Water & Wastewater Treatment Plants; Tours and discussion of Police and Fire Departments; Zoning, Planning, Building, Code Enforcement, DDA & Community Development; Overview of Local Government; The budget process—revenues and expenses, voting process, assessing process and Information Technology. Questions & to register for the **NEXT** citizen's academy call the **City Manager's office at (517) 546-3861** or email: thecity@ci.howell.mi.us.



Priority for enrollment will be given to City residents first, and you must be 18 years of age or older to participate.

As in Previous Years: We are committed to providing you safe and reliable water. We are pleased to provide you with this information to keep you fully informed about your water. We will be updating this report annually and will also keep you informed of anything that may occur throughout the year. For more information about your water, or the contents of this report, contact Jim Webster, Operations Manager — at 517-546-5309.

Get Copies of this report (and previous years) at: www.cityofhowell.org/watertreatment or at the Water Plant.