

City of Brown City Water Quality Report

The City conducts routine testing for drinking water contaminants. We detected very few contaminants, and none were higher than the Environmental Protection Agency (EPA) or the Michigan Department of Environmental Quality (MDEQ) allows. This annual report is a snapshot of the quality of water that we provided last year. Included are details about where your water comes from, what it contains, and how we have surpassed EPA/MDEQ water quality standards. We are committed to providing you with this information because informed customers are our best allies. Copies of this report are filed with the Sanilac County Health Department and MDEQ, and are available to the public at City Hall and on the City's website (www.ci.brown-city.mi.us). For more information about your water, please call City Manager Clint Holmes at 346-2325, or the Brown City Department of Public Works at 346-3060, or via e-mail at browncty@greatlakes.net.

We encourage public interest and participation in our community's decisions affecting drinking water. Regular City Council Meetings occur the second and fourth Monday of each month at 7:00 PM in City Hall. The public is welcome and encouraged to attend and participate.

Overview:

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 the 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 (1-800-426-4791).

The sources of drinking water (both tap 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, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or wastewater discharges, oil and gas production, mining or farming.

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

Radioactive contaminants, which are naturally occurring.

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 stormwater runoff, and septic systems. Another source is individuals not properly disposing of household or automotive chemicals such as paint, used motor oil or hydraulic fluid.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people, such as persons with cancer undergoing chemotherapy, individuals 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 and the US 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 EPA's Safe Drinking Water Hotline (1-800-426-4791).

The City of Brown City

Water Source: The City of Brown City is supplied by groundwater drawn from two wells. Well Number 3 was drilled in 1967, last overhauled in 2012, and is located in the northeast section of the City near the water tower. Well Number 4 was drilled in 1974, last overhauled in 2010, and is located about 1,600 feet south of Well Number 3. Both wells are approximately 320 feet deep and draw water from the Black Watershed. The City owns the land around these wells and restricts any activity that could contaminate them. After the water comes out of the wells, we add chlorine to protect you against microbial contaminants. Additionally, an arsenic abatement facility, using an adsorption-based treatment technology, has been operational on Well #3 since January 2008 and on Well #4 since April 2004. Wells Number 1 and 2 are no longer in service. Water is provided to homes and businesses via about 8.5 miles of water mains.

The State of Michigan performed an assessment of our source water to determine the susceptibility of the relative potential of contamination. The susceptibility rating is on a seven-tiered scale from "very-low" to "very-high" based primarily on geologic sensitivity, water chemistry and contaminant sources. The susceptibility of our source is MODERATE for Well #3 and MODERATELY HIGH for Well #4. We are making efforts to protect our sources by participation in the wellhead protection program. If you want to know more about the report, or want a copy, please contact the City Manager or DPW Foreman.

Water can be supplied by either well since they operate independently. Additionally, an auxiliary generator can provide water in the case of an electrical power failure.

In order to ensure that tap water is safe to drink, EPA/ MDEQ prescribes regulations that limit the amount of certain contaminants in water provided by public water systems, such as ours. We treat our water according to these regulations. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

CITY OF BROWN CITY WATER QUALITY DATA

The table below lists all the drinking water contaminants that we tested for during the 2013 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this field is from testing done January 1 - December 31, 2013. The state requires us to monitor for certain contaminants less than once a year because concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

Water test results must be kept on file at City Hall for ten years. These are public documents, and may be reviewed by anyone during normal working hours. Individual test copies are available for 25¢ per page.

| Substances | Date | Detected | | | | | Testing | | |
|------------------|----------|----------|--------|------|-----|---------|-----------|-----------------------------|-----------|
| Detected | Tested | Unit | MCL | MCLG | Max | Range | Violation | Major Sources | Frequency |
| Lead (Pb) | 07/17/12 | ppb | AL=15 | 0 | 3* | 0-3 | NO | Corrosion of plumbing | 5 years |
| Arsenic (As) | 12/31/13 | ppb | 10** | 0 | 3 | 0-3 | NO | Erosion of natural deposits | Monthly |
| Copper (Cu) | 07/17/12 | ppm | AL=1.3 | 1 | 70* | 0-70 | NO | Corrosion of plumbing | 5 years |
| Hardness (CaCO3) | 07/10/13 | ppm | - | - | 114 | 78-114 | NO | Naturally present | Annually |
| Fluoride | 07/10/13 | ppm | 4 | 4 | 1.8 | 1.4-1.8 | NO | Naturally present | Annually |
| Sodium (Na) | 07/10/13 | ppm | - | - | 199 | 94-199 | NO | Naturally present | Annually |
| Chloride | 07/10/13 | ppm | - | - | 161 | 26-161 | NO | Naturally present | Annually |

| Substances | Date | Detected | | | | | Testing | | |
|------------------------------|----------|---------------------|------------|------|-----|---------|-----------|-----------------------------|-----------|
| NOT Detected | Tested | Unit | MCL | MCLG | Max | Range | Violation | Major Sources | Frequency |
| Alpha emitters | 06/01/11 | pCi/L | 15 | 0 | 3.6 | 1.2-3.6 | NO | Erosion of natural deposits | 5 years |
| Radon (226/228) | 10/10/01 | pCi/L | - | - | <1 | <1 | NO | Erosion of natural deposits | 2014 |
| Trihalomethanes ^o | 07/14/11 | ppb | 80 | - | 0 | 0 | NO | Disinfection byproduct | 3 years |
| Nitrate | 07/10/13 | ppm | 10 | 10 | 0 | 0 | NO | Fertilizer, septic tanks | Annually |
| Nitrite | 07/10/13 | ppm | 1 | 1 | 0 | 0 | NO | Fertilizer, septic tanks | Annually |
| Coliform | Monthly | presence or absence | <2 samples | 0 | 0 | 0 | NO | Animal wastes, sewage | Monthly |

*90th percentile value. None of the samples for either lead or copper exceeded the Action level.
 **These arsenic values became effective January 23, 2006.
 °A list of these 71 organic compounds is available for review at City Hall.

Terms and Definitions:

- ppm:** parts per million - parts of contaminant per million parts of water. One part per million corresponds to 1 penny in \$10,000 or one second out of 11 days.
- ppb:** parts per billion – parts of contaminant per billion parts of water. One part per billion corresponds to one penny in \$10,000,000 or one second in 11,000 days (a little over 30 years).
- pCi/L:** picocuries per liter; one trillionth of a curie per liter of water. One part per trillion corresponds to one penny in \$10 billion, or one second in 11,000,000 days (a little over 30,000 years).
- Maximum Contaminant Level (MCL):** The “maximum allowed.” MCL is 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.
- Action Level (AL):** the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- Maximum Contaminant Level Goal (MCLG):** The “goal.” MCLG is 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.
- Detected Max:** Of all tests conducted, gives the maximum, or highest, level discovered.
- Range:** Of all tests conducted, gives the lowest and highest amounts detected.
- Inorganic Chemicals:** Chemical substances of mineral origin, such as lead and copper.
- Radionuclides:** Contaminants giving off ionizing radiation, or radioactivity, such as alpha (α) and beta (β) particles, and measured in pCi/L.
- Microbiological Contaminants:** Very small organisms, such as the Coliform bacteria, viruses, or fungi.
- Organic Compounds:** Naturally occurring or synthetic substances containing mainly carbon, hydrogen, nitrogen and oxygen. These include pesticides and industrial chemicals.
- Maximum Residual Disinfectant Level (MRDL) –** means 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) –** means 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.

Brown City’s Public Water Supply Source Water Assessment (SWAS) was conducted by MDEQ and based on a point system analyzing well log and location, geologic sensitivity, well construction, water chemistry and isotope data and isolation from sources of contamination. The MDEQ assigned the Susceptibility Determination for Well #3 at Moderate and for Well #4 at Moderately High. The Michigan SWAP evaluated 2416 community groundwater sources and determined susceptibility to be Moderate for 25.6% and Moderately High for 16.1%. A copy of these detailed reports is available at City Hall.

Important Health Concerns:

- Arsenic (As):** Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of skin cancer.
- Lead (Pb):** 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 Brown City 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 <http://www.epa.gov/safewater/lead>.

Is our water system meeting other rules that govern our operations? Yes, for example, during the evening of August 21st, a high-voltage power line located in the alley between Welles and Merrill Streets broke just before 9 PM. Since the water tower was off-line, Well #4 was maintaining water pressure for the City. When electrical power was lost, the pressure began to immediately drop. The DPW was able to get Well #3 on-line and water pressure was restored in less than an hour. However, since the pressure had dropped to zero, MDEQ required that a “Boil Water Notice” be issued to all system consumers. Local radio stations, the Sanilac County Department of Health and Channel 5 Saginaw were notified immediately and requested to report the “Boil Water Notice.” Multiple water samples were sent to the lab and, since the water met standards, the notice was lifted.

THIS NOTICE WILL NOT BE MAILED TO INDIVIDUAL CUSTOMERS.