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 stormwater runoff, industrial or domestic 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.

- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater 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. Food and Drug Administration regulations establish limits for contaminants in bottled water which provide the same protection for public health.

**Source Water Assessment:**
The State performed an assessment of our Lake Michigan source water in 2003 and completed it in 2004 to determine the susceptibility or the relative potential of contamination. The susceptibility rating is on a six-tiered scale from “very-low” to “high” based primarily on geologic sensitivity, water chemistry and contaminant sources.

**Paperless Water Bills:**
GHT is now offering paperless bills for utility customers. If you would like to sign up to receive your utility bill via email, please send a request to utilitybilling@ght.org or call (616) 842-5988 to request an application.

**On-Line Parks Reservations:**
Through a collaborative effort between our neighboring communities and Ottawa County, Grand Haven Charter Township is pleased to offer an online reservations system for our park facilities. To reserve a shelter in one of the Township Parks, please go to www.miottawa.org/ottawaparks which hosts the parks reservation system. A link can also be found on the Township’s website which is hosted on the Ottawa County website at www.ght.org/community/parks-recreation/.

All questions or concerns regarding reservations or payments should continue to be directed to Grand Haven Charter Township at (616) 842-5988.

**Monthly Electronic Newsletter:**
The Township wants residents that are engaged and aware of what is occurring. If you want to receive a monthly newsletter through your email account, please sign-up at: www.ght.org/community/sign-up/

---

**2016 Annual Drinking Water Quality Report**

Grand Haven Charter Township (GHT) is pleased to present this year’s Drinking Water Quality Report. This report is designed to inform you about the quality of the water we deliver to you everyday. Our constant goal is to provide you with a safe and dependable supply of drinking water. We are committed to ensuring the quality of your drinking water. Water is collected through submerged intakes located several feet under the bottom of Lake Michigan and is pre-filtered as it enters the treatment facility. The natural sand above the intakes provide a pre-filter barrier which complements the plant’s direct filtration process.

**The Northwest Ottawa Water System (NOWS) provided over 2.1 billion gallons of drinking water in 2016**

Grand Haven Charter Township, Village of Spring Lake, City of Ferrysburg, Spring Lake Township and Crockery Township.

Pictured above is Musical Fountain. Since 1962 the fountain has been a central feature of the Grand Haven area waterfront area.

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/CDC guidelines on appropriate means to lessen the risk of cryptosporidium and other microbial contaminants are also available from the Safe Drinking Water Hotline.

**If you have any questions about this report or your drinking water, please contact GHT’s Public Services Director Mark VerBerkmoes at (616) 604-6313 or mverberkmoes@ght.org.**

Moreover, to provide you with an opportunity for public participation in decisions, some of which might affect drinking water quality, the public is invited to attend the quarterly NOWS Administrative Committee meetings held at the Grand Haven City Hall Council Chambers. You may call the City of Grand Haven at an up-to-date meeting schedule.

All drinking water, including bottled water, may be reasonably expected to contain at least a small amount of some contaminants. It's important to remember that the presence of these substances 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 at 1-800-426-4791.
DID YOU KNOW?

- Only 3% of the tap water we use on a typical day is used for drinking.
- Households consume about 50% of their water by lawn sprinkling.
- Toilets use the most water with an average of 27 gallons per person per day.

**Tips on Outdoor Water Conservation**

1. **Water your lawn only when it needs it.** A good way to see if your lawn needs watering is to step on the grass. If it springs back up when you move, it doesn’t need water. If it stays flat, start sprinkling, but don’t over water that lawn! As a general rule, you should only water your lawn every five to seven days during the summer.

2. **Deep soak your lawn.** When you do water, do it long enough for the moisture to soak down to the roots where it will do the most good. A light sprinkling can evaporate quickly and tends to encourage shallow root systems. Applying at least 0.1 to 0.2 inches for each irrigation event, instead of over water, can reduce turf disease and insects, depending on soil and temperature conditions.

3. **Water during the cool part of the day.** Early morning, generally, or prior to the highest temperature of the day is better than dusk since it helps prevent growth of fungus.

4. **Be rain smart.** Adjust your irrigation system as the seasons and weather change. Or better yet, install a shut-off device that automatically detects rain or moisture. These devices are inexpensive and enable you to take advantage of the water without having to pay for it.

---

### Definitions

- **Residential Average Water Use**
- **Maximum Contaminant Level (MCL).** The “Maximum allowed” (MCL) is the highest level of contaminant that is allowed in drinking water. MCL’s are set close to the MCLG’s 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. MCLG’s allow for a margin of safety.
- **Treatment Technique (TT).** A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
- **NTU - Nephlometric Turbidity Unit.** Turbidity level shall not exceed 0.3 NTU in 95% of the samples every month. This is the measurement of suspended material that is found in water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
- **pCi/L - pico curies per liter (a measure of radioactivity).**
- **Unregulated Monitoring** - Unregulated contaminants are those for which EPA has not established drinking water standards. Monitoring helps EPA to determine where these contaminants occur and whether it needs to regulate these contaminants.
- **Gross Alpha emitters, Radium 226 & 228.** Radionuclide contaminants that give off ionizing radiation. The state allows NOWS to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. All data is representative of the water quality, but some are more than one year old.
- **Maximum Residual Disinfectant Level.** Means the highest level of a disinfectant allowed in drinking water, (MRDL). There is convincing evidence that an addition of a disinfectant is necessary for control of microbial contaminants.
- **Maximum Residual Disinfectant Level Goal.** Means the level of drinking water disinfectant below which there is no known or expected risk to health (MRDLG). MRDLGs do not reflect the benefits of the use of disinfectant to control microbial contaminants.
- **Listed below are contaminants/substances detected in the Northwest Ottawa Water System.** (Not listed are the hundreds of other contaminants for which we tested and that were not detected)

---

### Regulated Monitoring at the Customer Tap

<table>
<thead>
<tr>
<th>Substance</th>
<th>Violation</th>
<th>Highest Level</th>
<th>Unit</th>
<th>Range of</th>
<th>MCL</th>
<th>MCLG</th>
<th>Likely Source of Contamination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead (from 2016)</td>
<td>No</td>
<td>0</td>
<td>ppb</td>
<td>0 to 13</td>
<td>AL=15</td>
<td>0</td>
<td>Corrosion of household plumbing systems</td>
</tr>
<tr>
<td>Copper (from 2016)</td>
<td>No</td>
<td>73</td>
<td>ppb</td>
<td>0 to 157</td>
<td>AL=1300</td>
<td>1300</td>
<td>Copper and Lead testing is performed once every three years and the highest level detected = 960th percentile. The next scheduled testing period is 2019.</td>
</tr>
</tbody>
</table>

### Regulated and Unregulated Monitoring at the Treatment Plant and Distribution System

<table>
<thead>
<tr>
<th>Substance</th>
<th>Violation</th>
<th>Highest Level</th>
<th>Presence or Absence</th>
<th>Range of</th>
<th>MCL</th>
<th>MCLG</th>
<th>Likely Source of Contamination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turbidity</td>
<td>No</td>
<td>0.08 NTU</td>
<td>0.03 to 0.08</td>
<td>1.0 (TT)</td>
<td></td>
<td></td>
<td>Soil runoff (Turbidity is a measure of the cloudiness of the water.)</td>
</tr>
<tr>
<td>Chlorine Residuals</td>
<td>No</td>
<td>1.9 ppm 0.9</td>
<td>0.1 to 1.9</td>
<td>MRDL= 4.0</td>
<td>4.0</td>
<td>4</td>
<td>Water additive used to control microbes *Based on a Running Annual Average (RAA)</td>
</tr>
<tr>
<td>Fluoride (point-of-entry)</td>
<td>No</td>
<td>0.8 ppm</td>
<td>1 sample/ year</td>
<td>4</td>
<td>4</td>
<td></td>
<td>Water additive that promotes strong teeth</td>
</tr>
<tr>
<td>Chloride</td>
<td>No</td>
<td>15 ppm</td>
<td>1 sample/ year</td>
<td>4</td>
<td>4</td>
<td></td>
<td>Runoff from fertilizer and septic tanks</td>
</tr>
<tr>
<td>Sodium</td>
<td>No</td>
<td>10 ppm</td>
<td>1 sample/ year</td>
<td>4</td>
<td>4</td>
<td></td>
<td>Mineral and nutrient erosion</td>
</tr>
<tr>
<td>Gross Alpha (2015)</td>
<td>No</td>
<td>2 pCi/L</td>
<td>(0.64±1.29)</td>
<td>1 sample/ 9 years</td>
<td>15</td>
<td>0</td>
<td>Erosion of natural deposits</td>
</tr>
<tr>
<td>Radium 226 &amp; 228 (2015)</td>
<td>No</td>
<td>2 pCi/L</td>
<td>(1.11 ± 0.91)</td>
<td>1 sample/ 9 years</td>
<td>5</td>
<td>0</td>
<td>Past analysis records for Gross Alpha and Radium 226 &amp; 228 are well below the MCL; therefore these will only need to be tested every 9 years</td>
</tr>
<tr>
<td>Barium (2010)</td>
<td>No</td>
<td>20 ppb</td>
<td>1 sample/ 9 years</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Selenium (2010)</td>
<td>No</td>
<td>1 ppb</td>
<td>1 sample/ 9 years</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Arsenic (2010)</td>
<td>No</td>
<td>Not Detected</td>
<td>ppb</td>
<td>1 sample/ 9 years</td>
<td>10</td>
<td>0</td>
<td>Runoff from fertilizer and septic tanks</td>
</tr>
<tr>
<td>Nitrate</td>
<td>No</td>
<td>Not Detected</td>
<td>ppb</td>
<td>1 sample/ year</td>
<td>10</td>
<td>10</td>
<td>Runoff from fertilizer and septic tanks</td>
</tr>
<tr>
<td>Available Cyanide</td>
<td>No</td>
<td>Not Detected</td>
<td>ppb</td>
<td>200</td>
<td>200</td>
<td>200</td>
<td>Discharge from steel metal factories; discharge from plastic and fertilizer factories</td>
</tr>
</tbody>
</table>

---

### Monitoring in the Distribution System

<table>
<thead>
<tr>
<th>Substance</th>
<th>Violation</th>
<th>Highest Level</th>
<th>Range of</th>
<th>MCL</th>
<th>MCLG</th>
<th>Likely Source of Contamination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Trihalomethanes (THM)</td>
<td>No</td>
<td>LRAA= 46</td>
<td>27 to 49</td>
<td>80</td>
<td>0</td>
<td>By-product of drinking water chlorination</td>
</tr>
<tr>
<td>Haloacetic Acids (HAA5)</td>
<td>No</td>
<td>LRAA= 28</td>
<td>16 to 38</td>
<td>60</td>
<td>0</td>
<td>Compliance is based on a Locational Running Annual Average (LRAA)</td>
</tr>
</tbody>
</table>

---

**Source:** American Water Works Association Research Foundation, End Uses of Water