Grand Haven Charter Township 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.

Our water source is Lake Michigan. Water is collected through submerged intakes located several feet under the lake bottom and is pre-filtered as it enters the treatment facility. The natural sand above the intakes provides the pre-filter barrier which compliments the plant's direct filtration process.

We are pleased to report that your drinking water is safe and meets the Federal and State of Michigan drinking water health standards. The Northwest Ottawa Water System (NOWS) treatment plant and Grand Haven Charter Township routinely monitor for a variety of dissolved mineral and organic substances in your drinking water pursuant to state and federal laws.

This report is designed to give you detailed information which will ensure you of the quality of your drinking water. The tables in this brochure show the results of this monitoring from January 1st through December 31st, 2004. If you have any questions about this report or other matters related to your drinking water, please contact Public Services Director Mark VerBerkmoes at 842-5988.

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 bi-monthly NOWS Administrative Committee meetings held at the Grand Haven City Hall. You may call Grand Haven Township for an up-to-date meeting schedule.

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DO YOU KNOW WHAT A PENNY WILL BUY?

One penny will deliver about six gallons of drinking water to your home and family every day of the year. Now that's value!

Filter Backwash Recycling Rule - Reporting Violation

The NOWS Plant did not return all recycled flow to the required location by the deadline of June 8, 2004, and did not receive state approval for the location other than the required recycle return location (referred to as an alternate location). Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

However, there were no health effects associated with this failure to return the recycled flows at an approved location by the June 8, 2004 deadline. Treatment of the water did not change during that time and the NOWS water production plant continued to meet water quality standards. NOWS received approval from the state for the required location on August 4, 2004. This violation was resolved and your drinking water is safe.

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 must provide the same protection for public health.

Grand Haven Charter Township has a DVD explaining the production of drinking water from the NOWS plant. If you would like to borrow a copy of the DVD or have staff offer a seminar for your group or class either at the township offices or another location, please contact Kristi Walsh at 842-5988.

The sources of drinking water (both tap and bottled water) include rivers, streams, lakes, 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 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 must provide the same protection for public health.
Parts per million (ppm) - a measurement of concentration. One part per million corresponds to one minute in two years or a single penny in $10,000.

Parts per billion (ppb) - a measurement of concentration. One part per billion corresponds to one minute in 2000 years or a single penny in $10,000,000.

**Maximum Contaminant Level (MCL) -** 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” 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 0.5 NTU in 95% of the samples every month. This is the measurement of suspended material that is found in water. Turbidity is a good indicator of the effectiveness of the filtration system.

**Maximum Residual Disinfectant Level or Goal -** Means the highest level of a disinfectant allowed in drinking water, MDRL. Means the level of drinking water disinfectant below which there is no known or expected risk to health, MDRLG.

**pCi/l -** pico curies per liter (a measure of radioactivity).

**IMPORTANT HEALTH CONCERNS**

- “Unregulated Monitoring” refers to those contaminants for which the EPA has not established drinking water standards. Unregulated monitoring helps the EPA to determine where these contaminants occur and whether regulations are needed.

- Herbicides and pesticides were not detected in our drinking water.

- Radon gas is a naturally occurring gas present in some ground water. Radon released from drinking water is a relatively small part of the total radon in air. Other sources of radon are soils, which enter homes through foundations, and radon inhaled while smoking.

Experts are not sure what the cancer risk is from a given level of radon in your drinking water. However, radon gas may pose a lung cancer risk when the gas is released from water into air, as occurs during showering, bathing, or washing dishes or clothes, and a stomach cancer risk with drinking water containing radon. If you are concerned about radon in your home, tests are available to determine the total exposure level. For additional information on how to have your home tested, contact the Ottawa County Department of Environmental Health at (616) 393-5645.

**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**

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### REGULATED MONITORING AT THE CUSTOMER TAP

<table>
<thead>
<tr>
<th>Substance</th>
<th>Violation</th>
<th>Highest Level Detected</th>
<th>Unit Measurement</th>
<th>Range of Detection</th>
<th>MCL</th>
<th>MCLG</th>
<th>Likely Source of Contamination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead</td>
<td>No</td>
<td>6</td>
<td>ppb</td>
<td>1 — 16</td>
<td>AL=15</td>
<td>0</td>
<td>Corrosion of household plumbing systems</td>
</tr>
<tr>
<td>Copper (from 2001)</td>
<td>No</td>
<td>46</td>
<td>ppb</td>
<td>9 — 96</td>
<td>AL=1,300</td>
<td>1,300</td>
<td>Copper and Lead testing is performed once every three years and highest level detected = 90th percentile</td>
</tr>
</tbody>
</table>

### REGULATED AND UNREGULATED MONITORING AT THE TREATMENT PLANT AND DISTRIBUTION SYSTEM

- **Total Coliform Bacteria**
  - Yes/No Detected: 0% System Wide
  - Units: presence or absence
  - Highest Level Detected: Coliform was never detected
  - Bacteria in 5% of monthly samples: Naturally present

- **Turbidity**
  - Yes/No Detected: 0.17 NTU
  - Units: NTU
  - Range of Detection: 0.04 — 0.17 for 5.0 TT
  - Likely Source of Contamination: Soil run-off (Turbidity is a measure of the cloudiness of the water.)

- **Fluoride**
  - Yes/No Detected: 1.1 ppm
  - Units: ppm
  - Range of Detection: 1 sample/ year
  - Likely Source of Contamination: Water additive that promotes strong teeth

- **Nitrate**
  - Yes/No Detected: Not detected
  - Units: ppm
  - Range of Detection: 1 sample/ year
  - Likely Source of Contamination: Runoff from fertilizer and septic tanks

- **Alpha emitters (2002)**
  - Yes/No Detected: <0.7 pCi/L
  - Units: pCi/L
  - Range of Detection: 1 sample/ 9 years
  - Likely Source of Contamination: Erosion of natural deposits

- **Arsenic (2001)**
  - Yes/No Detected: 1 ppm
  - Units: ppm
  - Range of Detection: 1 sample/ 9 years
  - Likely Source of Contamination: 10 ppm

- **Barium (2001)**
  - Yes/No Detected: 20 ppm
  - Units: ppm
  - Range of Detection: 1 sample/ 9 years
  - Likely Source of Contamination: 200 ppm

- **Selenium (2001)**
  - Yes/No Detected: 1 ppm
  - Units: ppm
  - Range of Detection: 1 sample/ 9 years
  - Likely Source of Contamination: 50 ppm

- **Radium 226 & 228 (2002)**
  - Yes/No Detected: <0.9 pCi/L
  - Units: pCi/L
  - Range of Detection: 1 sample/ 9 years
  - Likely Source of Contamination: 5 ppm

- **Sodium**
  - Yes/No Detected: 7 ppm
  - Units: ppm
  - Range of Detection: 1 sample/ year
  - Likely Source of Contamination: Mineral and nutrient erosion

- **Chlorine Residuals**
  - Yes/No Detected: 1.5 avg.
  - Units: ppm
  - Range of Detection: 1.29 — 1.70
  - Likely Source of Contamination: Water additive to control microbes

- **Chloride**
  - Yes/No Detected: 12 ppm
  - Units: ppm
  - Range of Detection: 1 sample/year
  - Likely Source of Contamination: Mineral and nutrient erosion

- **List 1 USMA-Assessment**
  - Yes/No Detected: Not detected
  - Units: ppm
  - Range of Detection: 48 samples
  - Likely Source of Contamination: Agricultural, urban and industrial storm water runoff

### REGULATED MONITORING IN THE DISTRIBUTION SYSTEM

- **Total Trihalomethanes**
  - Yes/No Detected: 32.2 avg.
  - Units: ppm
  - Range of Detection: 9.0 — 77.2
  - Likely Source of Contamination: By-product of drinking

- **Bromoacetic Acids (HAA5)**
  - Yes/No Detected: 27.5 avg.
  - Units: ppm
  - Range of Detection: 10.1 — 41.2
  - Likely Source of Contamination: Water chlorination

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*List 1 UCMR Contaminants: 2,4- & 2,6-dinitrotoluene, DCFA mono & di-acid degradeate, Acetochlor, 4,4’DDE, EPTC, Molinate, MTBE, Perchlorate, Nitrobenzene, & Terbacil Monitored in February, May, August and November of 2002*