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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 discharges, oil and gas production, mining or farming.


Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban storm water 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 storm water 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. The susceptibility of our source is “moderate”. Questions about this report can be answered by contacting the NOWS water filtration plant 616-847-3488.



Rain barrel assembly

Labels: Downspout adapter, Downspout elbows, Trace base of downspout adapter and cut hole for a snug fit, Drill 1 1/4-in. holes for ventilation, Fiberglass window screen, 4-in. hose clamp, Female hose connector, Drill 1-in. hole for hose bibb, 1-in. fender washer, 3/4-in. hose bibb, 1-in. conduit hanger, #8 1/2-in. sheet-metal screw, Overflow hose, 1-in. hose clamp.

In addition to saving water in the yard and garden, rain barrels can save money, energy, protect the environment and provide plants with untreated “soft water” free of dissolved salts or sediment. Using a rain barrel will reduce the amount of storm water runoff into local community water systems which may reduce flooding and stress on the water system.

https://www.canr.msu.edu/news/rain_barrels_are_economical_and_ecolog

Methyl Tertiary-Butyl Ether (MTBE): This gasoline additive has contaminated some drinking water supplies across the country. Our drinking water does not contain MTBE.

PFAS: PFAS are widely used, long lasting chemicals, components of which break down very slowly over time. Because of their widespread use and their persistence in the environment, many PFAS are found in the blood of people and animals all over the world and are present at low levels in a variety of food products and in the environment.. PFAS are found in water, air, fish, and soil at locations across the nation and the globe. Scientific studies have shown that exposure to some PFAS in the environment may be linked to harmful health effects in humans and animals. There are thousands of PFAS chemicals, and they are found in many different consumer, commercial, and industrial products. This makes it challenging to study and assess the potential human health and environmental risks.

For more PFAS information go to: <http://michigan.gov/pfasresponse>



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

In a world where an estimated 3 million people die every year from preventable waterborne disease, our water systems allow us to drink from virtually any public tap with a high assurance of safety. Each community water supply meets rigorous federal and state health-protective standards.

FACT:

The Crockery Township Water System provided 81.7 Million Gallons in 2024



2024 Annual Drinking Water Quality Report

Northwest Ottawa Water System—City of Grand Haven, Grand Haven Charter Township, Village of Spring Lake, City of Ferrysburg, Spring Lake Township, Crockery Township, and Robinson Township

The Northwest Ottawa Water System (NOWS) 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 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 provides a pre-filter barrier which complements 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 the City of Grand Haven routinely monitors 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 the monitoring completed from January 1st through December 31st, 2024.

If you have any questions about this report or your drinking water, please contact the Public Utilities Supervisor Joe Hebert at 616-850-7219.

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 for an up-to-date meeting schedule.

All drinking water, including bottled water, may reasonably be expected to contain at least a small amount of some contaminants. It is 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

To download or view this on-line go to: www.grandhaven.org/departments/water-filtration/

Some in our community 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 may be 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.

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.

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Crockery Township



Health Effects of Lead

Lead can cause serious health effects in people of all ages, especially pregnant people, infants (both formula-fed and breastfed), and young children. Lead in drinking water is primarily from materials and parts used in service lines and in home plumbing. The Crockery Township Water System is responsible for providing high quality drinking water and removing lead pipes but cannot control the variety of materials used in the plumbing in your home. Because lead levels may vary over time, lead exposure is possible even when your tap sampling results do not detect lead at one point in time. You can help protect yourself and your family by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Using a filter, certified by an American National Standards Institute accredited certifier to reduce lead, is effective in reducing lead exposures. Follow the instructions provided with the filter to ensure the filter is used properly. Use only cold water for drinking, cooking, and making baby formula. Boiling water does not remove lead from water. Before using tap water for drinking, cooking, or making baby formula, flush your pipes for several minutes. You can do this by running your tap, taking a shower, doing laundry or a load of dishes. If you have a lead service line or galvanized requiring replacement service line, you may need to flush your pipes for at least 5 minutes to flush water from both your home plumbing and the lead service line.

If you are concerned about lead in your water and wish to have your water tested, contact Joe Hebert at 616-842-5400 for available resources. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at <https://www.epa.gov/safewater/lead>.

| Crockery Township service line inventory—WSSN 1664 | |
|----------------------------------------------------|-----|
| Lead Service Lines | 0 |
| Service Lines of Unknown Material | 508 |
| Total Number of System of Service Lines | 792 |

DEFINITIONS

◆ Unregulated Monitoring

Unregulated contaminants are those for which the USEPA has not established drinking water standards. Monitoring helps the USEPA determine where certain contaminants occur and whether regulation of those contaminants are needed.

◆ ppm - Parts Per Million

A measurement of concentration. One part per million corresponds with one minute in two years.

◆ ppb - Parts Per Billion

A measurement of concentration. One part per billion corresponds with one minute in 2000 years.

◆ ppt - Parts Per Trillion

A measurement of concentration. One part per trillion is equivalent to 1 drop in an Olympic sized swimming pool - (660,000 gals).

◆ MCL - Maximum Contaminant Level

The “maximum allowed”. MCL is the highest level of a contaminant allowed in drinking water.

◆ AL - Action Level

The concentration of a contaminant, which if exceeded, triggers treatment or other requirements, which water systems must follow.

◆ MCLG - Maximum Contaminant Level Goal

The “Goal” (MCLG) is the level of contaminant in drinking water below, which there is no known expected risk to health. MCLG’s allow for a margin of safety

◆ TT - Treatment Technique

A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

◆ NTU - Nephelometric Turbidity Unit

This is a measurement of suspended material that is found in water. We monitor because it is a good indicator of the effectiveness of our treatment process.

◆ pCi/l - Pico Curries Per Liter

A measure of radioactivity.

◆ LRAA - Locational Running Annual Average

Locational Running Annual Average (LRAA) is the average of sample analytical results for samples taken at a particular monitoring location during the previous 4 calendar quarters.

◆ MRDL - Maximum Residual Disinfectant Goal

The highest level of disinfectant allowed in the drinking water.

◆ MRDLG - Maximum Residual Disinfection Level Goal

The level of drinking water disinfectant below which there is no known or expected risk to health.

◆ RAA- Running Annual Average

Running Annual Average is a simple calculation using laboratory results from the monthly sampling events within a rolling twelve month period.

PROVIDED BELOW IS A LIST OF THE REGULATED AND UNREGULATED CONTAMINANTS DETECTED IN THE NORTHWEST OTTAWA WATER SYSTEM

REGULATED AND UNREGULATED MONITORING AT THE WATER TREATMENT PLANT & DISTRIBUTION SYSTEM

| Regulated Contaminant | MCL | MCLG | Highest Level Detected | Range | Year Sampled | Violation Yes/No | Typical Source of Contaminant |
|----------------------------------------------------------------------|------------------|------|------------------------|--------------|--------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| E.coli Bacteria (total number or % of positive samples/month) | See E. coli note | 0 | 0% System Wide | Not Detected | 2024 | No | Human and animal fecal waste |
| Total Coliform (total number or % of positive samples/month) | TT | 0 | 0% System Wide | Not Detected | 2024 | No | Naturally present in the environment |
| Bromodichloromethane (ppb) | 80 | N/A | 2.2 | N/A | 2024 | No | A byproduct of drinking water disinfection |
| Bromoform (ppb) | 80 | N/A | Not detected | N/A | 2024 | No | A byproduct of drinking water disinfection |
| Chlorodibromomethane (ppb) | 80 | N/A | 2.1 | N/A | 2024 | No | A byproduct of drinking water disinfection |
| Chloroform (ppb) | 80 | N/A | 1.6 | N/A | 2024 | No | A byproduct of drinking water disinfection |
| Chloride (ppm) | N/A | N/A | 16.0 | N/A | 2024 | No | Runoff from road de-icing, fertilizers and Leaching from septic tanks |
| Fluoride (ppm) | 4 | 4 | 0.84 | 0.59 to 0.84 | 2024 | No | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories. |
| Nitrate (ppm) | 10 | 0 | Not detected | N/A | 2024 | No | Agricultural activities, sewage discharge, industrial waste, and natural processes. |
| Sodium (ppm) | N/A | N/A | 10 | N/A | 2024 | No | Erosion of natural deposits |
| Styrene (ppb) | 100 | N/A | Not detected | N/A | 2024 | No | Industrial discharge, leaching from plastic materials, and runoff from landfills. Used in the production of plastics, rubber, resins. |
| Perfluoronanoic Acid (PFNA) (ppt) | 6 | N/A | Not detected | LRAA= <2.0 | 2024 | No | Chemicals used to make fluoropolymer coatings and products that resist heat, oil, stains, grease, and water |
| Perfluorooctanoic Acid (PFOA) (ppt) | 8 | N/A | 2.9 | RAA= <2.33 | 2024 | No | Chemicals used to make fluoropolymer coatings and products that resist heat, oil, stains, grease, and water |
| Perfluorooctane Sulfonic Acid (PFOS) (ppt) | 16 | N/A | 2.6 | RAA= <2.17 | 2024 | No | Chemicals used to make fluoropolymer coatings and products that resist heat, oil, stains, grease, and water |
| Perfluorohexanoic Acid (PFHxA) (ppt) | 400,000 | N/A | Not detected | LRAA= <2.25 | 2024 | No | Chemicals used to make fluoropolymer coatings and products that resist heat, oil, stains, grease, and water |
| Boron (ppb) | N/A | N/A | 25 | N/A | 2022 | No | Erosion of natural deposits |
| Barium (ppb) | 2000 | 2000 | 20 | N/A | 2022 | No | Discharge of drilling wastes; Discharge of metal refineries; Erosion of natural deposits. |
| Alpha emitters (pCi/L) | 15 | 0 | -1.32 | -1.32 ± 0.59 | 2024 | No | Erosion of natural deposits |
| Combined radium (pCi/L) | 5 | 0 | 1.01 | 0.27 ± 0.74 | 2024 | No | Erosion of natural deposits |

REGULATED MONITORING IN THE DISTRIBUTION SYSTEM—WSSN 1664

| Regulated Contaminant | MCL | MCLG | Average | Range | Year Sampled | Violation Yes/No | Typical Source of Contaminant |
|-------------------------------------------|-----|------|---------|--------------|--------------|------------------|--------------------------------------------|
| Total Trihalomethanes (TTHM) (ppb) | 80 | N/A | 28.1 | 20.6 to 29.7 | 2024 | No | A byproduct of drinking water disinfection |
| Haloacetic Acids (HAA5) (ppb) | 60 | N/A | 18.7 | 9.3 to 26.5 | 2024 | No | A byproduct of drinking water disinfection |
| Chlorine (ppm) (RAA) | 4 | 4 | 0.74 | 0.21 to 1.25 | 2024 | No | Water additive used to control microbes |

REGULATED MONITORING AT THE CUSTOMER TAP

| Regulated Contaminant | MCL | MCLG | 90 th Percentile | Range | Number of Samples above AL | Year Sampled | Violation Yes/No | Typical Source of Contaminant |
|-----------------------|-----|------|-----------------------------|-------|----------------------------|--------------|------------------|------------------------------------------------------------------------------------------------------------------|
| Lead (ppb) | 15 | 0 | 1 | 0 - 9 | 0 | 2022 | No | Lead service lines, corrosion of household plumbing including fittings and fixtures; Erosion of natural deposits |
| Copper (ppm) | 1.3 | 1.3 | 0.1 | 0-0.1 | 0 | 2022 | No | Corrosion of household plumbing systems; Erosion of natural deposits. |