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- **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.

The susceptibility of our source is “moderate”. A copy of the report can be obtained by contacting the Water Facilities Manager at 847-3487.

Health Effects of Lead: 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 Northwest Ottawa Water Treatment Plant 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 at 800-426-4791 or at <http://www.epa.gov/safewater/lead>.

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: please visit this website for the latest results <https://www.grandhaven.org/news-water-plant-pfas-results/>
For more PFAS information go to: <http://michigan.gov/pfasresponse>



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 Northwest Ottawa Water System Provided 2.3 Billion Gallons of Drinking Water in 2018

These models are available as tools that demonstrate sources of water pollution and prevention. The good news is that they are *free of charge* to borrow and use. Below are example organizations that have used these models:

- Schools (3rd thru 6th Graders)
- Church's
- Environmental Groups
- Cub/Boy/Girl Scouts

All models have setup instructions and a teacher's guide.



EnviroScape Environmental Education Models

The City of Grand Haven, Northwest Ottawa Water Filtration Plant and The Grand Haven – Spring Lake Sewer Authority are offering 4 models:

1. Watershed/Non-point Source Model
2. Coastal Model
3. Wetlands Model
4. Drinking Water & Wastewater Treatment Model.

2018 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 and Crockery Township

Spring Lake Township

Spring Lake 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.



The TWP has two water storage towers which provide additional flow capacity to the TWP water system during periods of high demand and fire emergencies as well as provide the water pressure within the system mains and service pipes.

This storage tower holds a million gallons of 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 the 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 Spring Lake 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, 2018.

If you have any questions about this report or your drinking water, please contact the Water Kyle Botbyl Spring Lake Water Operator at 616-846-2422 or kbotbyl@springlaketwp.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 for 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

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.

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.

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Parts per million (ppm) - A measurement of concentration. One part per million corresponds to one minute in two years.
Parts per billion (ppb) - A measurement of concentration. One part per billion corresponds to one minute in 2000 years.
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 - Nephelometric 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 those 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)

2018 Drinking Water Concerns: The Township of Spring Lake exceeded the drinking water standard for total trihalomethanes (TTHM) from the fourth quarter Locational Running Annual Average. Follow up sample results the Maximum Contaminate Level (MCL) resolving the LRAA violation. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

DID YOU KNOW?

- ◆ Only 3% of the tap water we use on a typical day is used for drinking.
- ◆ Households consume at least 50% of their water by lawn sprinkling.
- ◆ Water lawns early in the morning when the sun's rays aren't working to evaporate water.
- ◆ Toilets use the most water with an average of 27 gallons per person per day.
- ◆ Water efficient toilets, bathroom faucets and accessories can save the average home more than 11,000 gallons per year.
- ◆ An 8-oz glass of water can be refilled approximately 15,000 times for the same price as a six-pack of soda.
- ◆ Community water supplies are tested every day - far more frequent testing than for bottled water.
- ◆ The original reason for building many community water systems in North America wasn't to deliver safe drinking water—it was to fight fires!

Truth in Packaging

WHAT IF TAP WATER CAME WITH A LABEL?

Tap water doesn't come with a nutrition label, like you'd find on the side of a bottle of juice or iced tea. If it did, the label would include the following:

Water: Hydrogen, oxygen **Water Source:** Lake Michigan

Ingredients: Total organic carbon, chloride, sulfate, total dissolved solids, aluminum, sodium, alkalinity, iron, magnesium, manganese, hardness, calcium, potassium

Preservative: Chlorine **Additives:** Fluoride

Tested for Safety: The water utility's statement of safety is found in its annual Consumer Confidence Report. To be certified as safe, the water may be tested for lead, copper, trihalomethanes, haloacetic acids, total organic carbon, antimony, arsenic, barium, beryllium, bromide, cadmium, chromium, cyanide, mercury, nickel, selenium, silver, strontium, thallium, 28 synthetic organic chemicals (pesticides, herbicides, polychlorinated biphenyls, etc.), 22 volatile organic chemicals (oil and gasoline products, solvents, etc.), chlorate, nitrate, nitrite, total coliform bacteria and E. coli, radiologicals and PFAS.

source, AWWA OPFLOW 2018

REGULATED MONITORING AT THE CUSTOMER TAP

Compliance is determined using 90th percentile (i.e., 9 out of 10 samples must be below the AL)	Violation Yes/No	Action Level (AL)	MCLG	90th Percentile	Year Sampled	Number of Samples Above AL	Likely Source of Contamination
Lead (ppb)	No	15	0	0	2016	0	Corrosion of household plumbing systems Copper and Lead testing is performed once every three years. (next is 2019)
Copper (ppb)	No	1300	1300	34	2016	0	

REGULATED AND UNREGULATED MONITORING AT THE TREATMENT PLANT AND DISTRIBUTION SYSTEM

Substance	Violation Yes/No	Highest Level Detected	Unit Measurement	Range of Detection	MCL	MCLG	Likely Source of Contamination
Total Coliform/E. coli Bacteria	No	0% System Wide	Presence or Absence	Never detected	5% of monthly samples		Naturally present
Turbidity shall not exceed 0.3 NTU in 95% of the samples every month	No	0.10	NTU	0.01 to 0.10 Yearly Avg. = 0.03	1.0 (TT)		Soil runoff (Turbidity is a measure of the cloudiness of the water.)
Chlorine Residuals (system wide) *NOWS system wide avg.	No	2.02 *1.02	ppm	0.10 to 2.02	MRDL= 4.0	MRDLG = 4.0	Water additive used to control microbes
Fluoride (point-of-entry)	No	0.95	ppm	1 sample/ year	4	4	Water additive that promotes strong teeth
Chloride	No	15	ppm	1 sample/ year			Runoff from fertilizer and septic tanks
Sodium	No	9	ppm	1 sample/ year			Mineral and nutrient erosion
Sulfate	No	12	ppm	1 sample/ year			Mineral and nutrient erosion
Gross Alpha (2015)	No	2	pCi/L	(0.64±1.29) 1 sample/ 9 years	15	0	Past analysis records for Gross Alpha and Radium 226 & 228 are well below the MCL; therefore these will only need to be tested every 9 years (scheduled for 2024)
Radium 226 & 228 (2015)	No	2	pCi/L	(1.11 ± 0.91) 1 sample/ 9 years	5	0	
Barium (2010)	No	20	ppb	1 sample/ 9 years	200	200	Erosion of natural deposits
Selenium (2010)	No	1	ppb	1 sample/ 9 years	50	50	
Arsenic (2010)	No	Not Detected	ppb	1 sample/ 9 years	10	0	
Nitrate	No	Not Detected	ppm	1 sample/ year	10	10	Runoff from fertilizer and septic tanks
Available Cyanide	No	Not Detected	ppb	1 sample/ 9 years	200	200	Discharge from steel metal factories; discharge from plastic and fertilizer factories

REGULATED MONITORING IN THE DISTRIBUTION SYSTEM

Total Trihalomethanes (TTHM)	Yes	LRAA= 81	ppb	52 to 134	80	0	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	No	LRAA= 25	ppb	12 to 31	60	0	Compliance is based on a Locational Running Annual Average (LRAA)