



Holland Board of Public Works

WATER QUALITY REPORT 2021

This report covers the drinking water quality for Holland Board of Public Works for the 2021 calendar year. This information is a snapshot of the quality of the water that we provided to you in 2021. Included are details about where your water comes from, what it contains, and how it compares to United States Environmental Protection Agency (U.S. EPA) and The Michigan Department of Environment, Great Lakes, and Energy (EGLE) standards.



MONITORING AND REPORTING

THE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY (EGLE) REQUIREMENTS

EGLE and the U.S. EPA require us to test our water on a regular basis to ensure its safety. We update this report annually and will keep you informed of any problems that may occur throughout the year as they happen.

Download Water Quality Report

<https://www.hollandbpw.com/en/waterqualityreport>

Printed copies are available

Holland BPW, 625 Hastings Ave., Holland, MI 49423

We invite public participation in decisions that affect drinking water quality. Your comments and participation are welcome at our public board meetings. Email publiccomment@hollandbpw.com or attend in person at the HBPW Service Center, 625 Hastings Ave., on the Monday *between the first and second Wednesday of each month* at 4:00 p.m. We recommend that you call to confirm the meeting time, date and location prior to arriving or visit our website at hollandbpw.com for details about the meetings.

- For more information about your water or the contents of this report, contact Holland Water Treatment Plant, 616.355.1589.
- For more information about safe drinking water from EGLE, visit <https://www.michigan.gov/egle/about/organization/drinking-water-and-environmental-health/drinking-water>
- For more information about safe drinking water from the U.S. EPA, visit www.epa.gov/safewater

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

HOLLAND WATER TREATMENT PLANT

46 N. Lakeshore Drive
Holland, Michigan 49424
Telephone: 616.355.1589

Report a water emergency, call Holland BPW: 616.355.1500

Arrange a tour of Holland BPW Water Treatment Plant: 616.355.1500

Water conservation tips from Holland BPW: www.hollandbpw.com

EPA's Safe Drinking Water Hot line: 800.426.4791, www.epa.gov/safewater

EGLE Drinking Water website:

www.michigan.gov/egle/about/organization/drinking-water-and-environmental-health/drinking-water

CONTAMINANTS AND THEIR PRESENCE IN WATER

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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water hotline (800-426-4791) or at www.epa.gov/safewater.

SOURCES OF DRINKING WATER

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Our water comes from Lake Michigan. 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 storm water runoff, industrial or domestic 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 can be naturally-occurring or be the result of oil and gas production and mining activities.
- **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 storm water runoff, and septic systems.

In order to ensure that tap water is safe to drink, the U.S. EPA prescribes regulations that limit the levels of certain contaminants in water provided by public water systems. Federal Food and Drug Administration regulations establish limits for contaminants in bottled water which provide the same protection for public health.

VULNERABILITY OF SUB-POPULATIONS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised people such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune systems 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. U.S. EPA/Center for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water hotline (800-426-4791) or at www.epa.gov/safewater.

SOURCE WATER PROTECTION

The State performed an assessment of our source water, Lake Michigan, to determine the susceptibility or the relative potential of contamination. The susceptibility rating is on a seven-tiered scale from "very-low" to "very-high" based on geologic sensitivity, water chemistry and contamination sources. The State rated the HBPW's intake as "moderately sensitive" and the source water as having a "moderately high" susceptibility to contamination.

The State identified 364 potential sources of contamination within the total watershed of 175 square miles that could impact our water source. The report further states, "Historically, the Holland Board of Public Works Water Treatment Plant has effectively treated this water source to meet drinking water standards. There have been no detections of synthetic or volatile organic contaminants in the system's raw water." **A copy of HBPW's Source Water Assessment can be obtained by calling 616.355.1500.**

SOURCE WATER PROTECTIONS CONTINUE

After this Source Water Assessment Program (SWAP) concluded, Holland BPW initiated the creation and implementation of a Surface Water Intake Protection Plan (SWIPP), which has been developed in accordance with the guidelines of the SWAP and is an extension of those efforts. It is a voluntary program encouraged by the USEPA and the Michigan Department of Environment, Great Lakes and Energy (EGLE). Its purpose is to utilize the information provided by the mandatory SWAP program in order to allow regional participation of communities to protect their drinking water sources. For more information about the ongoing efforts of the SWIPP, please call the water treatment plant at 616.355.1589.

TERMS AND ABBREVIATIONS USED IN THIS REPORT

EPA
U.S. Environmental Protection Agency

EGLE
The Michigan Department of Environment, Great Lakes, and Energy

Maximum Contaminant Level Goal (MCLG)
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.

Maximum Contaminant Level (MCL)
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.

Maximum Residual Disinfectant Level (MRDL)
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)
The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not deflect the benefits of the use of disinfectants to control microbial contaminants.

Treatment Technique (TT)
A required process intended to reduce the level of a contaminant in drinking water.

ppt: Parts per trillion or nanograms per liter

ppb: Parts per billion or micrograms per liter

ppm: Parts per million or milligrams per liter

Action Level (AL)
The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Lifetime Health Advisory (LHA)
Refers to a concentration that is not expected to cause adverse health effects over a lifetime of consistent daily exposure at that level. This is based on a 154 pound adult consuming two liters of water each day. These advisories are not enforceable standards, but are meant to serve as guidance and are based on scientific studies.

Unregulated Contaminants
Contaminants that are suspected to be present in drinking water and do not have health-based standards set under the Safe Drinking Water Act (SDWA).

Highest Local Running Average
The highest average of a specific contaminant over the annual sampling period from a single sampling point. This measure is used in reporting TTHM and HAA5.

EASY WAYS YOU CAN HELP

Lake Michigan is a precious resource. We share this great resource with plants, animals, fish, and each other. Just as we share in the benefits of this magnificent Great Lake, we share in the responsibility of protecting and conserving our water source. Here are some easy ways you can conserve and protect our clean water.

EASY WAYS TO USE LESS WATER

- Fix leaks to avoid water waste.
- Turn off the tap when you brush your teeth.
- Run dishwashers and washing machines with full loads.
- Water the lawn in the early morning or at night.
- Use rain gardens and native landscaping in place of a traditional lawn.
- Choose Water Sense and Energy Star products when replacing plumbing fixtures and appliances. These labels make it easy to identify products that are certified to be efficient.



PROTECT OUR WATER SOURCE

A watershed refers to the system of natural water sources that complete the water cycle. It includes rain and snowfall, groundwater, streams, rivers, lakes and oceans. When it rains, rainwater enters the ground. The water flows into streams and rivers that lead to lakes. Smaller bodies of water feed larger bodies of water. Unnatural substances can also enter the watershed through the ground. Anything you spray or pour on the ground at home can reach Lake Michigan, our source for drinking water. That's why what you put on the ground matters.

Follow these rules to do your part in protecting the watershed:

- Don't over use pesticides and fertilizers.
- Don't dump hazardous waste on the ground.



WATER QUALITY DATA

This table lists all the drinking water contaminants that we detected during the 2021 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The data presented in this table is from testing done Jan. 1 through Dec. 31, 2021.

HOLLAND WATER TREATMENT PLANT WATER QUALITY DATA FOR 2021 (WSSN 3190)

Regulated at the Water Treatment Plant

Regulated Contaminant	Highest Level Detected	EPA'S MCL	EPA'S MCLG	Violations	Range of Detection	Typical Source of Contaminant
Fluoride (ppm)	0.78	4.00	4.00	None	0.17 - 0.78	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate (ppm)	0.31	10	10	None	0.27 - 0.31	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Turbidity (NTU)	0.13	1.0	N/A	None	0.017 - 0.132	Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
PFAS Compounds (ppt)	All results for PFAS compounds were less than the EGLE minimum reporting limit of 2ppt, and most of them were undetected.		Varies	None		
Total Organic Carbon (TOC)	The Total Organic Carbon (TOC) removal ratio is calculated as the ratio between the actual TOC removal and the TOC removal requirements. The TOC was measured each quarter and because the level was low, there is no requirement for TOC removal.					

HOLLAND BPW DISTRIBUTION SYSTEM WATER QUALITY DATA (WSSN 3190)

Regulated in the Distribution System

Regulated Contaminant	Highest Local Running Annual Average	Highest Level Detected	EPA'S MCL	EPA'S MCLG	Violations	Range of Detection	Typical Source of Contaminant
Chlorine [Cl2] (ppm)	1.20	1.48	4.0 MRDL	4.0 MRDLG	None	0.06 - 1.48	Water additive used to control microbes
Total Trihalomethanes [TTHM] (ppb)	39.8	43.0	80	0	None	28.2 - 43.0	Byproduct of drinking water disinfection
Haloacetic Acids [HAA5] (ppb) ¹	23.8	29.0	60	0	None	12.8 - 29.0	Byproduct of drinking water disinfection
Total Coliform Bacteria		0	TT	0	None	0 - 0	Naturally present in the environment

Unregulated Contaminants

Unregulated Contaminants: These are contaminants for which the EPA has not established drinking water standards. The purpose of the unregulated contaminants monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water.

Sodium (ppm)	10.8	Not Regulated	Not Regulated	None	10.0 - 10.8	Erosion of natural deposits
Holland BPW performed additional testing for other unregulated contaminants; no detections were found. Results of these tests are available by contacting the Water Treatment Plant at 616-355-1589.						

LAKETOWN TOWNSHIP DISTRIBUTION SYSTEM WATER QUALITY DATA FOR 2021 (WSSN 3747)

Regulated at the Customer's Tap

Inorganic Contaminant Subject to Action Levels (AL)	90th Percentile	EPA's Action Level	MCLG	# of Tests With Levels above EPA's AL	Range of Detection	Typical Sources of Contaminant
Copper (ppm)	0.02	1.3	1.3	None	0.0030 - 0.0236	Corrosion of household plumbing systems; Erosion of natural deposits.
Lead (ppb)	0.0	15	0.0	None	0 - 2.79	Lead service line, corrosion of household plumbing including fittings and fixtures; Erosion of natural deposits.

Regulated in the Distribution System

Regulated Contaminant	Highest Local Running Annual Average	Highest Level Detected	EPA'S MCL, TT	EPA'S MCLG	Violations	Range of Detection	Typical Source of Contaminant
Chlorine [Cl2] (ppm)	1.24	1.49	4.0 MRDL	4.0 MRDLG	None	1.02 - 1.49	Water additive used to control microbes
Total Trihalomethanes [TTHM] (ppb)	44.6	47.8	80	0	None	43.1 - 47.8	Byproduct of drinking water disinfection
Haloacetic Acids [HAA5] (ppb)	23.2	29.9	60	0	None	13.2 - 29.9	Byproduct of drinking water disinfection
Total Coliform Bacteria		0	TT	0	None	0 - 0	Naturally present in the environment

PARK TOWNSHIP DISTRIBUTION SYSTEM WATER QUALITY DATA FOR 2021 (WSSN 5203)

Regulated in the Distribution System

Regulated Contaminant	Highest Local Running Annual Average	Highest Level Detected	EPA'S MCL, TT	EPA'S MCLG	Violations	Range of Detection	Typical Source of Contaminant
Chlorine [Cl2] (ppm)	1.28	1.54	4.0 MRDL	4.0 MRDLG	None	0.22 - 1.54	Water additive used to control microbes
Total Trihalomethanes [TTHM] (ppb)	36.5	49.3	80	0	None	15.1 - 49.3	Byproduct of drinking water disinfection
Haloacetic Acids [HAA5] (ppb)	20.2	29.5	60	0	None	9.4 - 29.5	Byproduct of drinking water disinfection
Total Coliform Bacteria		0	TT	0	None	0 - 0	Naturally present in the environment



INFORMATION ABOUT 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. Holland Board of Public Works is responsible for providing high quality drinking water but cannot control the variety of materials used in private 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 have been notified that you have a service line with lead components, it is recommended that you run your water for at least 5 minutes to flush water from both your home plumbing and the service line.

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 1-800-426-4791 or at www.epa.gov/safewater/lead.

Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

QUANTITY OF SERVICE TYPES IN 2021

Service Description	City of Holland	Holland Township*	Laketown Township*	Park Township*	Total
Copper, Plastic, and other Non-Lead	6,768	612	1,215	4,267	12,862
Lead Service: Lead Pipe	0	0	0	0	0
Lead Service: Galvanized Pipe with Lead Gooseneck	2,021	32	0	0	2,053
Lead Service: Galvanized Pipe Previously Connected to Lead Gooseneck	1,717	12	0	4	1,733
Unknown Material	224	11	35	202	472
Total	10,686	595	1,138	4,467	16,886

*HBPW Service Areas Only

COPPER Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.



PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

Per- and polyfluoroalkyl substances (PFAS), sometimes called PFCs, are a group of chemicals that are resistant to heat, water, and oil. PFAS have been classified by the United States Environmental Protection Agency (U.S. EPA) as an emerging contaminant on the national landscape. For decades, they have been used in many industrial applications and consumer products such as carpeting, waterproof clothing, upholstery, food paper wrappings, fire-fighting foams, and metal plating. They are still used today. PFAS have been found at low levels both in the environment and in blood samples from the general U.S. population.

These chemicals are persistent, which means they do not break down in the environment. They also bioaccumulate, meaning the amount builds up over time in the blood and organs. Although our understanding of these emerging contaminants is constantly evolving, elevated levels of PFAS have the potential to cause increased cholesterol, changes in the body's hormones and immune system, decreased fertility, and increased risk of certain cancers. Links to these health effects in humans are supported by epidemiologic studies and by laboratory studies in animal models.

WHY WAS HOLLAND BPW'S SOURCE WATER TESTED FOR PFAS?

Holland BPW follows the EGLE standard compliance monitoring schedule for PFAS MCLs. EGLE developed Maximum Contaminant Levels (MCLs) for seven PFAS compounds in Michigan, which took effect in August 2020.

Even before PFAS MCLs were developed by EGLE, Holland BPW participated in voluntary sampling in 2019. The statewide research initiative was coordinated by EGLE. With health and safety at the core of our values, Holland BPW saw the voluntary sampling initiative as an opportunity to gain knowledge about our source water.

HOW CAN PFAS AFFECT PEOPLE'S HEALTH?

Some scientific studies suggest that certain PFAS may affect different systems in the body. The National Center for Environmental Health (NCEH)/Agency for Toxic Substances and Disease Registry (ATSDR) is working with various partners to better understand how exposure to PFAS might affect people's health.

If you are concerned about exposure to PFAS in your drinking water, please contact

- Michigan Department of Health and Human Services Toxicology hotline at 800-648-6942
- Center for Disease Control and Prevention/ATSDR at www.cdc.gov/cdc-info or 800-232-4636.

Currently, scientists are still learning about the health effects of exposures to PFAS, including exposure to mixtures.

WHAT OTHER WAYS COULD I BE EXPOSED TO PFOA, PFOS AND OTHER PFAS COMPOUNDS?

PFAS are used in many consumer products. They are used in food packaging such as fast-food wrappers and microwave popcorn bags; waterproof and stain-resistant fabrics such as outdoor clothing, upholstery, and carpeting; nonstick coatings on cookware; and cleaning supplies including some soaps and shampoos.

People can be exposed to these chemicals in house dust, indoor and outdoor air, food, and drinking water. There is still uncertainty regarding these routes of exposure and more research is necessary.

WHO CAN I CALL IF I HAVE QUESTIONS ABOUT PFAS IN MY DRINKING WATER?

If any resident has additional questions regarding this issue, the State of Michigan Environmental Assistance Center can be contacted at 800-662-9278.

WHERE CAN I LEARN MORE ABOUT PFAS?

For information on PFOA, PFOS, and other PFAS, including possible health outcomes, you may visit these websites:

- www.epa.gov/pfas
- www.atsdr.cdc.gov/pfas
- www.michigan.gov/pfasresponse