

2022 Drinking Water Quality Report

Consumer Confidence Report

The Safe Drinking Water Act (SDWA) is the federal law that ensures the quality of Americans' drinking water. Under SDWA, the Environmental Protection Agency (EPA) sets standards for drinking water quality and oversees the state, local municipality and water supplier who implements those standards. Amendments to the SDWA require all public water systems with at least 15 service connections or a system that regularly serves at least 25 individuals to publish and distribute a Consumer Confidence Report (CCR) annually.

The CCR increases the availability of information to water customers. Informed and involved customers can be strong allies of their water systems, large and small, as they take action on water issues. Also, an increase in public awareness can give sensitive sub-populations the information that they may need for their protection.

In order to maintain water quality within your home, it is recommended by the Oakland County Water Resources Commissioner (WRC) that you remove and clean each faucet aerator twice annually and flush stagnant water. Aerators are the screens that screw into the end of each faucet. In addition, it is also recommended that you annually flush out the water heater and that you regularly maintain any in-home treatment equipment, such as water filters and softeners.

Special Health Information

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 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.

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.

Lead Information

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. WRC 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 two minutes before using water for drinking or cooking.

If you have a lead service line it is recommended that you run your water for at least five minutes to flush water from both your home plumbing and the lead 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 800-426-4791 or at www.epa.gov/safewater/lead.

Contaminants

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, 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 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, 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 must provide the same protection for public health.

All 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by simply calling the EPA Safe Drinking Water Hotline at 800-426-4791.

Cross Connection Control Program

The Michigan Department of Environment, Great Lakes and Energy (EGLE) approved WRC Cross Connection Control Program was designed to protect your potable (drinking) water. A cross-connection is a link between a possible source of pollution and a potable water supply.

A pollutant may enter the potable water system by back pressure and/or via a back-siphon. The Cross Connection Control Program helps prevent backflow contamination which protects the quality of the water system and the safety and public health of all water customers.

For more information about your water system, visit www.oakgov.com/KnorrwoodKnollsWater

Knorrwood Knolls - Oakland Township



2022 Consumer Confidence Report

This report is designed to inform you about the water quality and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and to protect our water resources. We are committed to ensuring the quality of your water. The Oakland County Water Resources Commissioner (WRC) is pleased to present the Annual Drinking Water Quality Report (CCR) for the year 2022.

The water source is groundwater found in glacial materials. Two wells (one 6-inch and one 12-inch) provide the pumping capacity for this water system (Water system serial number [WSSN] 3666). At this time, the Department of Environment, Great Lakes, and Energy (EGLE) has determined the susceptibility for this water system as “moderately low.”

We are pleased to report that your drinking water is safe and meets Federal and State requirements. If you have questions about this report, or your water utility, please contact your WRC representative, **Kathryn DiCea**, at wrcwater@oakgov.com or **248-452-9158**. We want our valued customers to be informed about their water utility.

System Design and Improvements

We work continually to provide high quality water to every tap. In order to maintain a safe and dependable water supply, we may need to make improvements that will benefit all of our customers. These improvements are sometimes reflected as rate structure adjustments. We ask that all our customers help us conserve and protect our water resources, which impact our present lifestyle and our children's future. Please email wrcwater@oakgov.com, call 248-452-9158, or visit our website at www.oakgov.com/water if you have questions.

Your Water Quality

The Knorrwood Knolls Well Water Supply System is routinely monitored in accordance with the Safe Drinking Water Act (SDWA) for contaminants in your drinking water. The following tables show the results of our monitoring for the period of January 1 to December 31, 2022. In addition, other test results are shown for the year they were required, since annual testing is not required for some contaminants. The most recent test date for the detected contaminant is listed in the table.

Your Water Quality Continued

Unregulated contaminants are those for which the Environmental Protection Agency (EPA) has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

The maximum Contaminant Level (MCL) is the highest level of a contaminant that is allowed in drinking water and is set at a very stringent level. To understand the possible health effects described for many regulated constituents, a person would have to drink two liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

An ortho-polyphosphate blend is added to the water at the well house for iron sequestering and corrosion control. Chlorination and water quality parameter sampling is required by EGLE as part of this treatment process.

As you can see by the tables below, **the system had no violations**. We are proud that your drinking water meets or exceeds all Federal and State requirements. The EPA has determined that your water is safe at the levels detected.

Water Quality FAQs

Why is my water discolored?

Iron in the water can cause yellow, orange, or red discoloration. Iron is not a health risk but is an aesthetic concern that causes staining and discoloration.

Why is my water cloudy?

White/milky cloudiness is typically little air bubbles. To confirm, fill a clear glass with water and set it on your counter. After a short amount of time, it should start to clear from the bottom up.

Why does my water smell like chlorine?

Chlorine is a disinfectant that is added to the drinking water. The EPA has determined that levels of chlorine up to four parts per million in drinking water is safe for consumption.

Why does my water smell like rotten eggs?

Stagnant water may start to smell like sulfur or rotten eggs. Let the water run for a few minutes and the smell should clear. If the odor is only in the hot water, try flushing out your hot water tank. We recommend this be done at least annually.

Have more questions?

Please email wrcwater@oakgov.com or call 248-452-9158.

Regulated Contaminants Table

Contaminant	Test Year	Health Goal MCLG	Allowed Level MCL	Highest Detected Level	Range of Detection	Units	Major Sources in Drinking Water	Violation
Inorganic and Volatile Organic Chemicals								
Arsenic	2021	0	10	4	NA	ppb	Erosion of natural deposits; Runoff from glass and electronics production waste.	No
Barium	2021	2	2	0.19	NA	ppm	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.	No
Fluoride	2022	4	4	0.44	NA	ppm	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.	No
Radiological Contaminants								
Combined Radium	2020	0	5	0.34 +/- 0.10	NA	pCi/L	Erosion of natural deposits.	No
Disinfectant Residuals and Disinfectant By-Products - Monitoring at Customers' Tap								
Haloacetic Acids (HAA5)	2020	NA	60	3.5	NA	ppb	By-product of drinking water disinfection.	No
Total Trihalomethanes (TTHM)	2020	NA	80	2.2	NA	ppb		
Disinfectant (chlorine)	2022	MRDLG 4	MRDL 4	RAA 0.25	0.02 - 0.52	ppm	Water additive to control microbes.	No
Copper and Lead Monitoring at Customers' Tap								
Contaminant	Test Year	Health Goal MCLG	Action Level (AL)	90 th Percentile Value*	Range of Detection	Units	Major Sources in Drinking Water	Number of Samples above AL
Copper	2022	1.3	1.3	0.5	0.2 - 0.7	ppm	Corrosion of household plumbing systems; Erosion of natural deposits.	0
Lead	2022	0	15	1	0 - 2	ppb	Lead service lines, corrosion of household plumbing including fittings and fixtures, erosion of natural deposits.	0
<i>*The 90th percentile value</i> means 90 percent of the homes tested have copper and lead levels below the given 90th percentile value. If the 90th percentile value is above the AL, additional requirements must be met.								
<i>Per- and polyfluoroalkyl substances (PFAS)</i> were analyzed for in 2022 and were not detected.								
The State allows us 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 of the data is representative of the water quality, but some are more than one year old.								

Unregulated Contaminants Table

Contaminant	Test Year	MCLG	MCL	Average Level	Range of Detection	Units	Major Sources in Drinking Water
Alkalinity	2022	NA	NA	265	260 - 270	ppm	Naturally occurring due to geological processes.
Calcium	2022	NA	NA	77	NA	ppm	
Chloride	2022	NA	NA	30	26 - 36	ppm	
Hardness	2022	NA	NA	304	NA	ppm	
Iron	2022	NA	NA	1.5	NA	ppm	
Magnesium	2022	NA	NA	27	NA	ppm	
Sodium	2022	NA	NA	20	NA	ppm	
Sulfate	2022	NA	NA	31	28 - 35	ppm	
Orthophosphate	2022	NA	NA	1.7	1 - 2	ppm	Water additive for corrosion control.

NOTICE TO NON-RESIDENTIAL CUSTOMERS

Federal Regulations require that as the billing customer, it is your responsibility to ensure that all water consumers at your facility (whether business, educational institute, apartments, etc.) have access to the report. Please post this CCR in a visible area. Copies are available for your distribution by contacting the WRC office at wrcwater@oakgov.com or 248-452-9158.

Important Definitions

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

Haloacetic Acids (HAA5) - HAA5 is the total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total.

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 Contaminant Level Goal (MCLG) - The level of contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

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 reflect the benefits of the use of disinfectants to control microbial contaminants.

Not Applicable (NA)

Not detected (ND) - Not detectable at testing limit.

Parts Per Billion (ppb) - The ppb is equivalent to microgram per liter. A microgram = 1/1000 milligram. A ppb is equivalent to one penny in \$10,000,000.

Parts Per Million (ppm) - The ppm is equivalent to milligram per liter. A milligram = 1/1000 gram. A ppm is equivalent to one penny in \$10,000.

Running Annual Average (RAA) - The average of analytical results for all samples during the previous four quarters.

pCi/L - picocuries per liter (a measure of radioactivity)

Total Trihalomethanes (TTHM) - The sum of chloroform, bromodichloromethane, dibromochloromethane and bromoform. Compliance is based on the total.

MAINTAINING QUALITY DRINKING WATER IN YOUR HOME



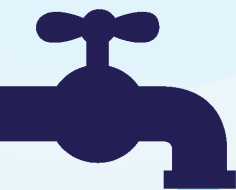
A Shared Responsibility

Maintaining drinking water quality is a shared responsibility between the water supplier and the resident.

We're Committed to...

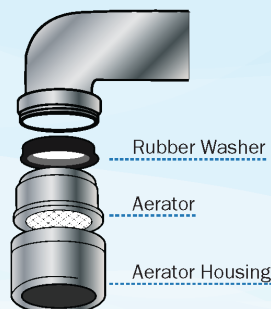
- Protecting public health and wellness.
- Delivering the same clean, high-quality water we've always delivered.
- Providing greater public education.

In order to maintain or improve water quality at home, there are a few things you should remember to do on a regular basis:



Remove and Clean Your Aerator Every 6 Months.

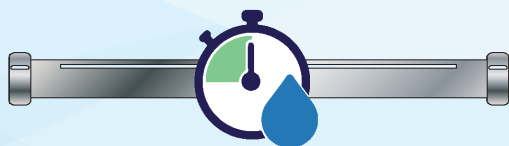
The aerator is that screen on the end of your faucet, and it's important to remove it and clean it every six months.



Also, if you have any plumbing work done, remove and clean the aerators on every faucet to get rid of particles that build up.

Flush Water that Has Been Sitting in Your Pipes.

Overnight, water sits stagnant in your pipes. And the longer it sits there, the more metal it may contain. So, flush your pipes by running the cold water for several minutes before you use it.



Replace Faucets, Fittings or Valves From Before 2014.

Even if marked 'lead-free,' faucets, fittings and valves sold before 2014 may contain higher levels of lead than the current tolerance of 0.25%. It might be time to upgrade.



Drink and Cook With Cold Water

Only use cold water for drinking or cooking. Hot water can sit for long periods of time in a hot water heater and could contain dissolved metals.

Purely Resourceful

www.oakgov.com/water