

**Garden City
Michigan**



2018 Consumers' Annual Report on Water Quality

Garden City Department of Public Works

Introduction:

Drinking water quality is important to our community and the region. The City of Garden City and the Great Lakes Water Authority (GLWA) are committed to meeting state and federal water quality standards including the Lead and Copper Rule. With the Great Lakes as our water source and proven treatment technologies, the GLWA consistently delivers safe drinking water to our community. Garden City operates the system of water mains that carry this water to your home's service line. This year's Water Quality Report highlights the performance of GLWA and Garden City water professionals in delivering some of the nation's best drinking water. Together, we remain committed to protecting public health and maintaining open communication with the public about our drinking water.

We're pleased to present to you this year's Annual Quality Water Report. This report is designed to inform you about the quality water 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 are pleased to report that our drinking water *has surpassed* water quality standards as mandated by the Environmental Protection Agency (EPA) and the State of Michigan Department of Environmental Quality (MDEQ).

We have also included simple measures that all our residents can take to help in our continuing effort to clean up the Rouge River. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. Our water is purchased from the City of Detroit, which is treated surface water drawn from the Detroit River. Your source water comes from the Detroit River, situated within the Lake St. Clair, Clinton River, Rough River, Ecorse River, watersheds in the U.S. and parts of the Thames River, Little River, Turkey Creek and Sydenham watersheds in Canada. The water is directed to the Springwells and Southwest treatment plants for processing. This treated water enters Garden City at an average rate of 1.89 million gallons a day, at any one of four connections to the Great Lakes Water Authority. From there it may travel through some of the 110 miles of water main, to the approximately 12,000 service connections that make up our water system.

The Michigan Department of Environmental Quality in partnership with the U.S. Geological Survey, the Detroit Water and Sewerage Department, and the Michigan Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of GLWA's Detroit River source water for potential contamination. The susceptibility rating is based on a seven-tiered scale and ranges from very low to very high determined primarily using geologic sensitivity, water chemistry, and potential contaminant sources. The report described GLWA's Detroit river intakes as highly susceptible to potential contamination. However, all four GLWA water treatment plants that service the city of Detroit and draw water from the Detroit River have historically provided satisfactory treatment and meet drinking water standards.

GLWA has initiated source-water protection activities that include chemical containment, spill response, and a mercury reduction program. GLWA participates in the National Pollutant Discharge Elimination System permit discharge program and has an emergency response management plan. In 2016, the Michigan Department of Environmental Quality approved the GLWA Surface Water Intake Protection Program plan. The programs include seven elements that include the following: roles and duties of government units and water supply agencies, delineation of a source water protection areas, identification of potential sources of contamination, management approaches for protection, contingency plans, siting of new water sources, public participation and public education activities. If you would like to know more information about the Source Water Assessment report please, contact GLWA at (313 926-8102).

The Garden City Water Department has your drinking water routinely monitored for contaminants, including lead, according to Federal and State laws. All drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some constituents. 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 Environmental Protection Agency's Safe Drinking Hotline at 800-426-4791.

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.

Garden City and the Great Lakes Water Authority are committed to safeguarding our water supply and delivering the highest quality drinking water to protect public health. Please contact us with any questions or concerns about your water. If you have any questions about this report, the Source Water Assessment report or concerns with your water utility, please contact Brad Ohman at the Department of Public Works, 734-793-1800. It is a goal of the Garden City Department of Public Works to keep our customers informed. We work around the clock to provide top quality water to every tap.

Contaminants that may be present in source water include:

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. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

It's important to remember that the presence of these constituents does not necessarily pose a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's **Safe Drinking Water Hotline at (800-426-4791)**.

- **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, urban storm water runoff, and residential uses.
- **Organic chemical contaminants**, including synthetic and volatile organics, which are by-products 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.

No Unregulated Contaminants were detected during calendar year 2018 testing program. Test results are available upon request. Unregulated contaminants are those for which USEPA has not established drinking water standards. Monitoring helps USEPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.

KEY TO DETECTED CONTAMINANTS TABLE

SYMBOL	ABBREVIATION	DEFINITION/EXPLANATION
>	Greater Than	
°C	Celcius	A scale of temperature in which water freezes at 0° and boils at 100° under standard conditions.
AL	Action Level	The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.
HAA5	Haloacetic Acids	HAA5 is the total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic and trichloroacetic acids. Compliance is based on the total.
LRAA	Locational Running Annual Average	The average of analytical results for samples at a particular monitoring location during the previous four quarters.
Level 1	Level 1 Assessment	A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in the water system.
Level 2	Level 2 Assessment	A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.
MCL	Maximum Contaminant Level	The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
MCLG	Maximum Contaminant Level Goal	The level of contaminate in drinking water below which there is no known or expected risk to health.
MRDL	Maximum Residual Disinfectant Level	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.
MRDLG	Maximum Residual Disinfectant Level Goal	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.
n/a	Not Applicable	
ND	Not Detected	
NTU	Nephelometric Turbidity Units	Measures the cloudiness of water.
pCi/L	Picocuries Per Liter	A measure of radioactivity.
ppb	Parts Per Billion (one in one billion)	The ppb is equivalent to micrograms per liter. A microgram = 1/1000 milligram.
ppm	Parts Per Million (one in one million)	The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram
RAA	Running Annual Average	The average of analytical results for all samples during the previous four quarters.
TT	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
TTHM	Total Trihalomethanes	Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromochloromethane and bromoform. Compliance is based on total.
µmhos	Micromhos	Measure of electrical conductance of water

SOUTHWEST AND SPRINGWELLS WATER TREATMENT PLANT 2018 REGULATED DETECTED CONTAMINANTS TABLES

2018 Inorganic Chemicals – Monitoring at the Plant Finished Water Tap

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation Yes/No	Major Sources in Drinking Water
Fluoride Southwest Springwells	6/12/2018	ppm	4	4	0.66	n/a	No	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
	6/12/2018	ppm	4	4	0.67	n/a	No	
Nitrate Southwest Springwells	6/12/2018	ppm	10	10	0.41	n/a	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
	6/12/2018	ppm	10	10	0.34	n/a	No	
Barium Southwest Springwells	5/16/2017	ppm	2	2	0.01	n/a	No	Discharge of drilling waste; Discharge from metal refineries; Erosion of natural deposits.
	5/15/2017	ppm	2	2	0.01	n/a	No	

2018 Disinfection By-Products Monitoring in Distribution System, Stage 2 Disinfection By-Products / Southwest & Springwells

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest LRAA	Range of Detection	Violation Yes/No	Major Sources in Drinking Water
(TTHM) Total Trihalomethanes	2018	ppb	n/a	80	30.5	17-45	No	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	2018	ppb	n/a	60	17.25	12-21	No	By-product of drinking water disinfection

2018 Disinfectant Residuals – Monitoring in Distribution System by Treatment Plant

Regulated Contaminant	Test Date	Unit	Health Goal MRDLG	Allowed Level MDRL	Highest RAA	Quarterly Range of Detection	Violation Yes/No	Major Sources in Drinking Water
Total Chlorine Residual Southwest Springwells	Jan. to Dec. 2018	ppm	4	4	0.58	0.48-0.61	No	Water additive, used to control microbes.
		ppm	4	4	0.68	0.63-0.69	No	

2018 TURBIDITY—Monitored every 4 hours at Plant Finished Water

Highest Single Measurement Cannot Exceed 1 NTU	Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)	Violation Yes/No	Major Sources In Drinking Water
Southwest 0.19 NTU Springwells 0.25 NTU	100 %	No	Soil Runoff

Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

2018 MICROBIOLOGICAL CONTAMINANTS – Monthly Monitoring in Distribution System

Regulated Contaminant	MCLG	MCL	Highest Number Detected	Violation Yes/No	Major Sources in Drinking Water
Total Coliform Bacteria	0	Presence of Coliform bacteria > 5% of monthly samples	0	No	Naturally present in the environment.
<i>E. Coli</i> Bacteria	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal or <i>E. Coli</i> positive.	0	No	Human waste and animal fecal waste.

2017 LEAD AND COPPER —Monitoring at Customers' Tap Southwest & Springwells. Lead Testing is on a 3 Year Cycle.

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Action Level AL	90th Percentile Value*	Number of Samples Over AL	Violation Yes/No	Major Source in Drinking Water
Lead	2017	ppb	0	15	3.3	0	No	Corrosion of household plumbing systems; Erosion of natural deposits.
Copper	2017	ppm	1.3	1.3	0.2	0	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.

*The 90th percentile value means 90 percent of the homes tested have lead and copper levels below the given 90th percentile value. If the 90th percentile value is above the AL additional requirements must be met.

Regulated Contaminant

TREATMENT TECHNIQUES 2018

Typical Source of Contaminants

Total Organic Carbon (ppm)	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.	Erosion of natural deposits
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Radionuclides 2014 / Southwest

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level	Level Detected	Violation Yes/No	Major Source in Drinking Water
Combined Radium 226/228	5/13/14	pCi/L	0	5	0.65 + or - 0.54	No	Erosion of natural deposits.

SPECIAL MONITORING

Contaminant	MCLG	MCL	Level Detected 2018	Source of Contamination
Sodium (ppm) Southwest Springwells	n/a n/a	n/a n/a	6.36 6.00	Erosion of natural deposits.

Southwest: Cryptosporidium is a microbial parasite found in surface water throughout the United States. Although Cryptosporidium can be removed by filtration, the most commonly used filtration cannot guarantee 100% removal. Current test methods do not enable us to determine if these organisms are dead or alive. Symptoms of infection include nausea, diarrhea and abdominal cramps. Most healthy persons can overcome the disease within a few weeks. However, immuno-compromised people (such as those with AIDS, undergoing chemotherapy or recent organ transplant recipients) are at a greater risk of developing a severe, life-threatening illness. Immuno-compromised persons should contact their doctor to learn about appropriate precautions to prevent infection. Cryptosporidium must be taken in through the mouth to cause disease and it may be passed by other means than drinking water.

Southwest and Springwells: GLWA voluntarily monitors for Cryptosporidium and Giardia in our untreated source water monthly. The March 2018 untreated water samples collected from the Belle Isle intake indicated the presence of one Giardia cyst. All other samples collected from the Belle Isle intake in the year 2018 were absent for the presence of Cryptosporidium and Giardia. Systems using surface water like GLWA must provide treatment so that 99.9 percent of Giardia lamblia is removed or inactivated.

U.S. EPA Unregulated Contaminant Monitoring Rule 3 (UCMR3) Monitoring Results—Garden City Test Results				
Unregulated Contaminant	MCLG	MCL	Highest Level Detected	Source of Contamination
Chromium (Hexavalent)	N/A	N/A	.17 ppb	Naturally occurring element; used in making steel and other alloys; Chromium-6 is used for chrome plating, dyes and pigments, leather tanning, and wood preservation
Chromium, Total	N/A	N/A	.25 ppb	Naturally-occurring element; used in making steel and other alloys
Molybdenum	N/A	N/A	10.3 ppb	Naturally-occurring element found in ores and present in plants, animals and bacteria; commonly used form molybdenum trioxide used as a chemical reagent
Strontium	N/A	N/A	110 ppb	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
Vanadium	N/A	N/A	.58 ppb	Naturally-occurring elemental metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst

Additional Information

The EPA (Environmental Protection Administration) prescribes regulations to ensure that tap water is safe to drink. These regulations limit the amount of certain contaminants in the water that a public system supplies. The FDA (Food and Drug Administration) regulates bottled water.

Vulnerability of Some Populations

Some people may be more vulnerable to contaminants in drinking water than is 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 care providers. EPA/CDC 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).

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than other homes in the community as a result of materials used in your home’s plumbing. Additional information is available from the Safe Drinking Water Hotline 800-426-4791.

What You Can Do . . .

- **If your water is milky/cloudy:** Most often this is due to air that is suspended in the water. This can happen when there is a change in the normal pressure in the water main commonly due to breaks, opening of fire hydrants or a change in the supplied pressure.
- **If your water is reddish or brown:** Pipes may be rusting in the street your home or your hot water tank. Also iron, a harmless chemical, may be dissolved in the water. Iron when it comes into contact with air turns reddish brown.
- **To report a broken water main:** Between the hours of 7:30 a.m. and 3:30 p.m. Monday – Friday, call the Department of Public Works at 734-793-1800 . After hours, call the Police Department at 734-793-1730. They will contact a DPW representative who will check the problem.



CROSS CONNECTIONS

Unsafe water from outside the water system can potentially enter our drinking water.

A cross connection is an unprotected direct or potential connection between drinking water piping and a contamination source. This can be as simple as garden hose submerged in a swimming pool, a bucket of detergent, or other non-potable liquid. Other sources are service lines connected to boilers, irrigation systems or other process equipment. Under certain Conditions, a cross connection allows unsafe water to flow backward through piping and into the drinking water. This is called backflow, and is caused by two types of pressure changes: backsiphonage and backpressure.

Backsiphonage is caused by negative pressure from a vacuum in the supply piping, just as drinking through a straw draws liquid from a glass. Backsiphonage can be created when there is a stoppage in the water supply due to repairs, breaks in the distribution system, or increased demand at one location such as firefighting. This can reverse the normal flow of water in the system and pull contaminants into the drinking water from unprotected cross connections inside your home or business.

Backpressure reverses normal system flow and occurs when downstream water pressure is greater than pressure in the distribution system. This can occur in any pressurized system such as boilers, elevated tanks, or systems with pumps installed after the drinking water enters the building.

What can you do? We all need to do our part to ensure that our homes have clean water we expect each and every day. Common hazards in around your home can contaminate your drinking water as well as your neighbors. Look around your home or business to identify areas where you might unknowingly have a cross connection – the laundry room, the garage, the utility room or your sprinkler system. It is especially important to remove outside garden hoses from buckets while conducting cleaning or work around your home. A garden hose can be extremely hazardous when left submerged in a swimming pool, a bucket, chemical sprayer or when left elevated above the outside faucet. Backflow prevention devices must be purchased and installed on all cross connections – contact a local plumbing contractor to ask about having your home checked and protected from cross connections.

Unprotected cross connections are everyone's responsibility.

The water we all drink comes from our water plant and our water system - we all share the same water let's keep it safe. Additionally the MDEQ and Garden City have approved mandatory cross connection programs in which inspections and verification can / may occur throughout the water utility system to ensure the protection of our water with respect to cross connections – this includes commercial and residential customers.

The Michigan Department of Environmental Quality Office of Drinking Water and Municipal Assistance can be reached at 517-284-6514 or visit their website at www.michigan.gov/deq.



Important Information about Lead

Safe drinking water is a shared responsibility. The water that GLWA delivers to our community does not contain lead. Lead can leach into drinking water through home plumbing fixtures, and in some cases, customer service lines. Corrosion control reduces the risk of lead and copper from leaching into your water. Orthophosphates are added during the treatment process as a corrosion control method to create a protective coating in service pipes throughout the system, including in your home or business. The City of Garden City performs required lead and copper sampling and testing in our community. Water consumers also have a responsibility to maintain the plumbing in their homes and businesses, and can take steps to limit their exposure to lead.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Garden City 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://water.epa.gov/drink/info/lead>.

The tables/charts on page 4 show the results of our monitoring for the 2018 year. The next Lead Testing Program will be in 2019 .

Guidelines for Reducing Potential Lead Exposure from Drinking Water

Run your water before drinking. The more time water has been sitting in your home's pipes, the more lead it may contain. Therefore, if your water has not been used for several hours, run the water before using it for drinking or cooking. This flushes lead containing water from the pipes. Additional flushing may be required for homes that have been vacant or have a longer service line.

- Running your water before you drink it does not mean you need to waste water.
- You can run your water by flushing a toilet, watering your lawn or indoor plants, doing laundry, or even washing a load of dishes.

Flush your cold-water pipes after long periods of non-use. If you are moving into a new home or apartment or residence that has been unoccupied for some time, you should run all faucets an extended period of five minutes or more before using any water for drinking or cooking.

Clean your faucet aerator. The aerator on the end of your faucet should be removed at least monthly to rinse out any debris that may include particulate lead.

Do not boil water to remove lead. Boiling water will not remove lead.

Use cold water for preparing baby formula. Do not use water from the hot tap to make baby formula. If you have a lead service line, consider using bottled water or a lead-reducing filter to prepare baby formula.

Use cold water for drinking and cooking. Do not cook with or drink water from the hot water tap; lead dissolves more easily into hot water.

Use a water filter. Read packaging to find a filter that meets NSF/ANSI Standard 53 for the reduction of lead. Be sure to maintain and replace the filter device in accordance with the manufacturer's instructions to protect water quality.

Consider replacing your kitchen and bathroom sink faucets. Older faucets, fittings, fixtures and valves market "lead-free" may contain higher levels and contribute to lead found in your drinking water. Any new plumbing materials intended for drinking water use sold starting in 2014 should meet a more restrictive "lead-free" definition and may contain up to 0.25 percent lead. When purchasing new plumbing materials, it is important to look for materials that are NSF/ANSI 61 standard certified.

Check if your home has a lead service line. Homes with lead service lines have a higher risk of having high lead levels in drinking water. Please contact your water supply for more information.

Learn about your drinking water by reading this report or visiting our website at www.gardencitymi.org and clicking on Department of Public Works. If you wish to get your drinking water tested, use a certified lab. To find a certified lab, go to the Michigan Department of Environmental Quality's home page, www.michigan.gov/deq and search "certified lab test."



**ECR WSS
POSTAL PATRON**

**PLEASE SEE IMPORTANT ENCLOSED INFORMATION REGARDING GARDEN CITY
WATER QUALITY. BUSINESSES, PLEASE POST IN YOUR WORKPLACE.**

WHAT TO DO IN THE EVENT OF A WATER EMERGENCY

In an effort to protect the health and safety of the public, the Michigan Department of Environmental Quality (MDEQ) has devised three public water warning notices in the event of an emergency. They are as follows:

- **Boil Water Notice:** If this warning is issued, residents must bring all water to a boil for at least three minutes then let it cool before using. Boiled or bottled water should be used for drinking, making ice, brushing teeth, washing dishes, and preparing food until further notice.
- **Do Not Drink Notice:** If this warning is issued, residents should not use the water for drinking, making ice, brushing teeth, washing dishes, or preparing food until further notice.
- **Do Not Use Water Notice:** This is the most severe warning issued. If it is issued, residents should not use the water for any reason. Bottled water should be used for all needs until further notice and residents should not, under any circumstances, run their water. That includes filling up bathtubs, flushing toilets or watering lawns.

By understanding the differences between these three warnings you can better protect yourself and your family. (Contact number for MDEQ is 800-292-4706). If you are not notified of a water emergency but still lose water pressure or service, simply run your tap until the water becomes clear once the pressure has been restored.

Randy Walker, *Mayor*

Doc Dougherty, *City Manager*

City Council

Mark Jacobs, *Mayor Pro-Tem*
Patricia McKarge

Kelly Kerwin
Pat Squires

Jaylee Lynch
Brian Earle

Department of Public Works—734-793-1800

Office Hours: Monday-Friday 7:30 a.m. - 3:30 p.m.

After Hours Emergency: 734-793-1730

Brad Ohman, *DPW Director*

Steve Michalak, *DPW Supervisor*