

# 2022 Water Quality Report

## for

# Charter Township of Genesee

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# 2022 Water Quality Report for Charter Township of Genesee

This report provides a snapshot of the drinking water quality for Charter Township of Genesee for the calendar year 2022. Genesee County Drain Commissioner-Division of Water and Waste Services (GCDC-WWS) Water Treatment Plant are committed to meeting the state and federal water quality standards including the Lead and Copper Rule. With the Great Lakes as our water source and proven treatment technologies, GCDC-WWS Treatment Plant consistently delivers safe drinking water to our community. Included are details about where our water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and state standards.

## About our system:

Your source water comes from Lake Huron. The watershed includes numerous short, seasonal streams that drain to Lake Huron. GCDC-WWS voluntarily developed and received approval in 2017 for a source water protection program (SWIPP) for the Lake Huron Water Treatment Plant and GCDC-WWS Treatment Plant intake. The program includes seven elements that include the following: roles and duties of government units and water supply agencies, delineation of a source water protection area, identification of potential of source water protection area, management approaches for protection, contingency plans, siting of new sources and public participation and education. If you would like to know more information about the Source Water Assessment or SWIPP, please contact the Public Works at (810) 640-2000.

## Special information available:

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/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.

## Health and safety information:

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 EPA's Safe Drinking Water Hotline (800-426-4791).

## Contaminants that may be present in source water include:

- T **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- T **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.
- T **Pesticides and herbicides**, which may come from a variety of sources such as agriculture and residential uses.
- T **Radioactive contaminants**, which are naturally occurring or be the result of oil and gas production and mining activities.
- T **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, EPA prescribes regulations that 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.

## Lead Service Lines

The Charter Township of Genesee has 1894 water service lines that are 4" or smaller in size. 1764 of which are considered unknown but not suspected to be lead. The Township will be working to verify water service line material.



# 2022 Regulated Detected Contaminant Tables

## Inorganic Chemicals – Monitoring at the Plant Finished Water Tap

| Regulated Contaminant | Test date | Unit | MCLG Or MRDLG | MCL, TT, or MRDL | Highest Level Detected | Range of Detection | Violation Yes/no | Major Sources in Drinking Water   |
|-----------------------|-----------|------|---------------|------------------|------------------------|--------------------|------------------|---|
| Flouride              | Daily     | ppm  | 4             | 4                | 0.82                   | 0.36-0.82          | NO               | Erosion of Natural Deposits: Water Additive, which promotes strong Teeth: Discharge from fertilizer and Aluminium factories |
| Barium                | 2022      | ppm  | 2             | 2                | .014                   | N/A                | NO               | Erosion of natural deposits; discharge from metal refineries discharge from drilling wastes                                 |

## Disinfection By-Products- Monitoring in Distribution System

| Regulated Contaminant        | Test Date | Unit | MCLG Or MRDLG | MCL, TT, Or MRDL | Highest LRAA | Range of Detection | Violation Yes/no | Major Sources in Drinking Water           |
|------------------------------|-----------|------|---------------|------------------|--------------|--------------------|------------------|---|
| Total Trihalomethanes (TTHM) | 2022      | ppb  | n/a           | 80               | 47           | 27 – 63            | NO               | By-Product of Drinking Water Chlorination |
| Halocetic Acids (HAA5)       | 2022      | ppb  | n/a           | 60               | 13           | 9 - 16             | NO               | By-Product of Drinking Water disinfection |

## 2022 Disinfection Residuals – Monitoring in Distribution System

| Regulated Contaminant   | Unit | MCLG or MRDLG | MCL, TT, or MRDL | Highest RAA | Range of Detection | Violation Yes/no | Major Sources in Drinking Water    |
|-------------------------|------|---------------|------------------|-------------|--------------------|------------------|------------------------------------|
| Total Chlorine Residual | ppm  | 4             | 4                | .67         | .2 – 1.36          | NO               | Water Additive to control Microbes |

## 2022 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 |
|--|--|------------------|---------------------------------|
| 0.09   | 100%   | NO               | Soil Runoff                     |

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

## 2021 Lead and Copper at Consumer Tap

| Regulated Contaminant | Unit | Health Goal MCLG | Action Level AL | 90 <sup>th</sup> Percentile Value* | Range of individual results | Number of Samples Over AL | Violation Yes/no | Major Sources in Drinking Water  |
|-----------------------|------|------------------|-----------------|------------------------------------|-----------------------------|---------------------------|------------------|--|
| Lead (Jan-June)       | ppb  | 0                | 15              | 0                                  | 0 - 2                       | 0                         | NO               | Corrosion of household plumbing including fittings and fixtures, lead service lines, erosion of natural deposits |
| Lead (July-Dec)       | ppb  | 0                | 15              | 0                                  | 0 - 0                       | 0                         | NO               | Corrosion of household plumbing including fittings and fixtures, lead service lines, erosion of natural deposits |
| Copper (Jan-June)     | ppm  | 1.3              | 1.3             | 0.0                                | 0.0 – 0.1                   | 0                         | NO               | Corrosion of household plumbing including fixtures and fittings, lead service lines, erosion of natural deposits |
| Copper (July-Dec)     | ppm  | 1.3              | 1.3             | 0.0                                | 0.0 – 0.1                   | 0                         | NO               | Corrosion of household plumbing including fittings and fixtures, lead service lines, erosion of natural deposits |

\*90<sup>th</sup> percentile value is the concentration of lead and copper in tap water exceeded by 10 percent of the sites sampled during a monitoring period. If the 90<sup>th</sup> percentile value is above the AL additional requirements must be met.

| Regulated Contaminant      | Treatment Technique  | Typical Source of Contaminant |
|----------------------------|--|-------------------------------|
| 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 month and because the level was low There is no TOC removal requirement | Erosion of Natural deposits   |

## 2022 Microbial Contaminates – Monthly Monitoring in Distribution System

| Microbial Contaminants  | MCL   | MCLG | Number Detected | Violation Yes/no | Typical Source of Contaminant        |
|-------------------------|---|------|-----------------|------------------|--------------------------------------|
| Total Coliform Bacteria | >1 positive monthly sample (>5% of monthly samples Positive)                            | 0    | ND              | NO               | Naturally present in the environment |
| E.coli bacteria         | Routine and repeat sample Total coliform positive, and is Also fecal or E.coli positive | 0    | ND              | NO               | Human and Animal fecal Waste         |

| Radionuclides 2019          |           |       |                |               |                |                  |                                 |
|-----------------------------|-----------|-------|----------------|---------------|----------------|------------------|---------------------------------|
| Regulated contaminant       | Test date | Unit  | MCLG, or MRDLG | Allowed Level | Level Detected | Violation Yes/No | Major sources in Drinking Water |
| Combined Radium 226 and 228 | 2-13-19   | pCi/L | 0              | 5             | 1.1 +/- 0.50   | NO               | Erosion of Natural Deposits     |
| Gross Alpha                 | 2-13-19   | pCi/L | 0              | 15            | 2.0+-1.0       | NO               | Erosion of Natural Deposits     |

### 2022 Unregulated Detected Contaminant

| Unregulated Parameters | MCLG | MCL | Level Detected | Source of Contamination                |
|------------------------|------|-----|----------------|--|
| Sodium (ppm)           | n/a  | n/a | 8.9            | Erosion of natural deposits            |
| Magnesium              | n/a  | n/a | 7.5            | Erosion of natural deposits            |
| Sulfate                | n/a  | n/a | 24             | Runoff, leaching from natural deposits |

### Unregulated Contaminants

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of Unregulated monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. Before EPA regulates a contaminant, it considers adverse health effects, the Occurrence of the contaminant in drinking water, and whether the regulation would reduce health risk. GCDC-WWS began monitoring for Unregulated contaminants in 2013 and will continue additional sampling in 2019 and 2020. The Charter Township of Genesee began Monitoring for Unregulated Contaminates in 2018 and continued sampling into 2019. The following tables list the Unregulated substances detected during the 2019 calendar year.

### Unregulated Contaminants – Monitored at the primary source (AM1 : metals, pesticides, alcohols, SOVCs) – tested for in 2019

| Contaminant          | Units | Result    | Source   |
|----------------------|-------|-----------|--|
| Bromide              | ppm   | ND - 23.2 | Naturally present in fossil fuels, coal, and shale |
| Total Organic Carbon | ppm   | 2 - 2.4   | Erosion of natural deposits                        |

### 2019 Unregulated Contaminants-Monitored in distribution system(AM1 : Entry Point)

| Contaminant | Units | Range       | Source                         |
|-------------|-------|-------------|--------------------------------|
| Manganese   | Ug/l  | 4.56 – 4.72 | Disinfection by products group |

### 2019 Unregulated Contaminants – HAA's Monitored in the distribution system ( AM2 : DBP1,DBP2 ) – tested for in 2019

| Contaminant              | Units | Range          | Source                                    |
|--------------------------|-------|----------------|---|
| Bromochloroacetic acid   | ug/l  | 3.00 – 3.33    | By-product of drinking water disinfection |
| Bromodichloroacetic acid | ug/l  | 3.52 – 4.56    | By-product of drinking water              |
| Chlorodibromoacetic acid | ug/l  | 0.623 – 0.915  | By-product of drinking water              |
| Dibromoacetic acid       | ug/l  | 0.432 – 0.493  | By-product of drinking water              |
| Dichloroacetic acid      | ug/l  | 7.61 – 12.3    | By-product of drinking water              |
| Monobromoacetic acid     | ug/l  | <0.300 – 0.311 | By-product of drinking water              |
| Trichloroacetic acid     | ug/l  | 7.85 – 12.7    | By-product of drinking water              |

### 2019 Unregulated contaminate – Monitored in Distribution system (AM3 : Entry Point – tested for in 2019

| Contaminate | Units      | Range       | Source                               |
|-------------|------------|-------------|--------------------------------------|
| CVTM        | Percent CV | .800 – 8.60 | 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. The water that the GCDC-WWS Water Treatment plant delivers to our community does not contain lead. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Charter Township of Genesee 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 want 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 <http://www.epa.gov/safewater/lead>.



How do I read this Chart?

It's easy! Our water is tested to assure that it is safe and healthy. These Tables are based on tests conducted by The Charter Township of Genesee within the last five calendar years. We conduct many tests throughout the year ,however, only testes that show the presence of contaminant are shown here. The table on this page is key to the terms used in the following table. Sources of Contaminants show where this substance usually originates.

## Key to Detected Contaminates Table

| Symbol       | Non-Abbreviated Symbol or Term           | Definition/Explanation   |
|--------------|--|--|
| <b>AL</b>    | Action level                             | The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.   |
| <b>HAA5</b>  | Halocetic Acids                          | HAA5 is the total of bromoacetic, chloroacetic, dibromo acetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total.   |
| <b>LRAA</b>  | Locational Running Annual Average        | The average of analytical results for samples at particular monitoring location during the previous four quarters.   |
| <b>MCL</b>   | Maximum Contaminant Level                | 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                               |
| <b>MCLG</b>  | Maximum Contaminant Level Goal           | The level of contaminant in drinking water below which there is no known or expected risk to health. MCLGs allows for a margin of safety.  |
| <b>MRDL</b>  | Maximum Residual Disinfectant Level      | The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.                    |
| <b>MRDLG</b> | Maximum Residual Disinfectant Level Goal | The level of a drinking water disinfectant below which there no known or expected risk to health. MRDLG's do not reflect the benefits of use of disinfectants to control microbial contaminants. |
| <b>N/A</b>   | Not Applicable                           | Does not apply   |
| <b>ND</b>    | Not Detected                             | Result is not detectable at or below the laboratory detection level.   |
| <b>NTU</b>   | Nephelometric Turbidity Units            | Measures the cloudiness of water   |
| <b>pCi/L</b> | Picocuries Per Liter                     | A measure of radioactivity   |
| <b>ppb</b>   | Parts Per Billion ( one in one billion)  | The ppb equivalent to micrograms per liter.<br>A microgram = 1/1000 milligram  |
| <b>ug/L</b>  | Micrograms per liter                     | A microgram = 1/1000 milligrams 1 microgram per liter is equivalent to 1 part per billion (ppb)  |
| <b>ppm</b>   | Parts Per Million ( one in one million)  | The ppm is equivalent to milligrams per liter<br>A milligram =1/1000 gram  |
| <b>RAA</b>   | Running Annual Average                   | The average of analytical results for samples taken during the previous twelve months.   |
| <b>TT</b>    | Treatment Technique                      | A required process intended to reduce the level of a contaminant in drinking water.  |
| <b>TTHM</b>  | Total Trihalomethanes                    | Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromochloromethane and bromoform. Compliance is based on total.  |
| <b>C</b>     | Celsius                                  | A scale of temperature in which water freezes at 0 and boils at 100 under standard conditions.   |
| <b>&gt;</b>  | Greater than                             | Mathematical symbol that denotes a value "greater than" another value.   |
|              | 90 <sup>TH</sup> Percentile Value        | The concentration of lead or copper in tap water exceeded by 10 percent of sites sampled during a monitoring period.   |