

Robert Ellis, DPW Manager

I

7244 N Genesee Road, PO Box 215, Genesee, Ml 48437

### 810 640 2000 Ext 5 1

810 640 1004 Fax

www .geneseetownship.com

## 2017 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 2017. The Great Lakes Water Authority (GLWA) and the 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, the GLWA and the 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 the lower **Lake Huron watershed.** The watershed includes numerous short, seasonal streams that drain to Lake Huron. 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 or relative potential of contamination. The susceptibility rating is on a seven-tiered scale ranging from "very low" to "very high" based primarily on geologic sensitivity, water chemistry and contamination sources. The Lake Huron source water intake is categorized as having a moderately low susceptibility to potential contaminant sources. The Lake Huron water treatment plant has historically provided satisfactory treatment of this source water to meet drinking water standards. GLWA and 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. lmmuno­ 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.

**1**

Water Quality Data

The table below lists all the drinking water contaminants that we detected during the 2017 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 - December 31, 2017. 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.

**Terms and abbreviations used below:**

* 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): means 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): means 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.
* NIA: Not applicable ND: not detectable at testing limit QQQ: parts per billion or micrograms per liter illill!: parts per million or milligrams per liter pCi/1: picocuries per liter (a measure of radioactivity).

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

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Regulated Contaminant** | **Allowed Level****MCL** | **Health Goal****MCLG** | **Highest Level****Detected** | **Range** | **Year Sampled** | **Violation Yes** *I* **No** | **Typical Source of Contaminant** |
| Fluoride (ppm) | **4** | **4** | 0.77 | n/a | 2017 | **NO** | Erosion of natural deposits. Discharge from fertilizer and aluminum factories. |
| Nitrate (ppm) | 10 | 10 | **ND** | n/a | **2017** | **NO** | Water additive used to control microbes |
| Disinfection By-Products - Stage 2 Quarterly Monitoring in Distribution System |
| HaloaceticAcid | 60 | n/a | **LRAA**17 | n/a | 2017 | **NO** | By-product of drinking water disinfection |
| Trihalomethanes | 80 | n/a | **LRAA****45** | n/a | 2017 | **NO** | By-product of drinking water chlorination |
| Disinfectant Residuals Monitoring in Distribution System |
| Total Chlorine Residual | 4 | 4 | **2.13** | **.87-2.13** | Jan-Dec 2017 | **NO** | Water additive used to control microbes |
| **Contaminant Subject to AL** | **Action Level** | **Health Goal MCLG** | 90% of Samples This Level | **Sample Date** | **Number of Samples Above AL** | **Typical Source of Contaminant** |
| Lead 15 (ppb) | 15 | 0 | 0.0 ppb | 2017 | 0 | Corrosion of household plumbing systems; Erosion of natural deposits |
| Copper 1.3 (ppm) | 1.3 | 1.3 | 0.1 ppm | 2017 | 0 | Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives |

* EPA considers 50 pC1/I to be the level of concern for beta particles.

•• Unregulated contaminants are those for which EPA has not established drinking water standards. Monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.

I **Contaminant** I **MCLG** I **MCL** I **Level Detected** I Source of Contamination I

I Sodium (ppm) I n/a I n/a I 6.00 I Erosion of natural deposits I

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Microbial****Contaminants** | **MCL** | **MCLG** | **Number****Detected** | **Violation****Yes** *I* **No** | **Typical Source of****Contaminant** |  |
| Total Coliform Bacteria | >1 positive monthly sample (>5% of monthly samples positive) | 0 | NONE | NO | Naturally present in the environment |
| Fecal Coliform and *E.coli* | Routine and repeat sample total coliform positive, and one is also fecal or *E. coli* positive | 0 | NONE | NO | Human and animal fecal waste |

**2017**

..

**Turb1d1ty- Monitored every 4 hours at Plant Finished Water**

2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **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** |
| **0.28 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. Information about lead:

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. The water that GLWA 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 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 **(800-426-47910** or at [http://www.epa.gov/safewater/lead.](http://www.epa.gov/safewater/lead)

.

|  |  |  |  |
| --- | --- | --- | --- |
|  | ' | , .. |  |
| **K e y to Detected Contaminar.1t s Table** |
| **Symbol** | **Abbreviation for** | **Definition/Explanation** |
| **MCLG** | Maximum Contaminant Level Goal | The level of contaminant in drinking water below which there is no known or expected risk to health. |
| **MCL** | Maximum Contaminant Level | The highest level of a contaminant that is allowed indrinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technoloqv. |
| **MRDLG** | Maximum Residual Disinfectant level goal | The level of a drinking water disinfectant below which there is no known or expected risk to health. MRLDG's donot reflect the benefits of the use of disinfectants to control microbial contaminants. |
| **MRDL** | Maximum Residual Disinfectant Level | The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectantis necessary for control of microbial contaminants. |
| ppb | Parts per billion(one in one billion) | The ppb is equivalent to micrograms per liter. A microqram = 1/1000 milligram. |
| **ppm** | Parts per million (one in one million) | The ppm is equivalent to milligrams per liter. A milligram= 1/1000 gram. |
| **NTU** | Nephelometric Turbidity Units | Measures the cloudiness of water. |
| **ND** | Not Detected |  |
| **TT** | Treatment Technique | A required process intended to reduce the level of a contaminant in drinkinq water. |
| **AL** | Action Level | The concentration of a contaminant, which, if exceeded, triggers treatment or other requirementswhich a water system must follow. |
| **HAAS** | Haloacetic acids | HAA5 is the total of bromoacetic, chloroacetic,dibromoaceti,cdichoroacetic, and trichloroacetic acids. Compliance is based on the total . |
| **TTHM** | Total Trihalomethanes | Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromoochloromethane and bromoform. Compliance is based on total. |
| **pCi/1** | picocuries per liter | a measure of radioactivity |
| **n/a** | not applicable |  |
| > | Greater than |  |

- ····-·- " - " " -

I

**LRAA** Locational Running Annual Average The average of analytical results for samples at a particular monitoring

I locat ion during the previous four quarters.

Genesee Township, Great Lakes Water Authority and the GCDC-\NWS Treatment Plant are committed to safeguarding our water supply and delivering the highest quality drinking water to protect public health. We will update this report annually and will keep you informed of any problems that may occur throughout the year, as they happen. Copies are available at Township Hall, G-7244 N. Genesee Rd. We invite public participation in decisions that affect drinking water quality. For more information about your water, or the contents of this report, contact Public Works at (810) 640-2000 ext.

#5. For more information about safe drinking water visit the U.S. Environmental Protection Agency at [www.epa.gov/safewater/.](http://www.epa.gov/safewater/)

3

|  |
| --- |
| **2017 Genesee County Water and Waste Detected Contaminant Tables** - **NEW WTP (Nov., Dec. 2017)** |
| **Regulated Contaminant** | **Test Date** | **Units** | **Health Goal i\ICLG** | **Allowed Level MCL** | **Highest Level Detected** | **Range of Detection** | **Violation yes/no** | **Major Sources in Drinking Water** |
| **Inorganic Chemicals** - **Monitoring at the Plant Finished Water Tap** |
| Fluoride | 12-7-17 | ppm | 4 | 4 | 0.85 | n/a | no | Erosion of natural deposits; Water additive, which promotes strong teeth; Disc harge from fertilizer and a luminum factories. |
| Nitrate | 12-7- 17 | ppm | 10 | 10 | ND | n/a | no | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits |
| Barium | 12- 1 l-!7 | ppm | 2 | 2 | 0.01 | n/a | no | Discharge of drilling waste; Discharge from metal refineries; Erosion of natural deposits. |

|  |
| --- |
| **Disinfectant Residuals** - **Monitoring** in **Distribution** |
| **Regulated Contaminant** | **Test Date** | **Units** | **Health Goal MRDLG** | **Allowed Level MRDL** | **Monthly Ave.** | **Range of Detection** | **Violation yes/no** | **Major Sources in Drinking Water** |
| **Total Chlorine Residual** | Dec 2017 | ppm | 4 | 4 | 0.64 | 0.4-0.9 | no | Water additive used to control microbes |

|  |
| --- |
| **December 2017 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 Sourcesin Drinking Water** |
| 0.56 NTU | 99% | 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. |

|  |  |  |
| --- | --- | --- |
| **Regulated Organic Carbon (ppm, )** | **Treatment Technique** | **Typical Source of Contaminant** |
| **Total Organic Carbon (ppm)** | The Total Organic Carbon (TOC)removal ratio is calculated as 1he ratio between the actual TOC removal and the TOC removal requirements. The TOC was measured each quaner and because the level was low, there is no TOC removal requirement. | Erosion of natural deposits |

|  |
| --- |
| **Radionuclides** |
| **Regulated Contaminant** | **Test Date** | **Unit** | **Health Goal MCLG** | **Allowed Level** | **Level Detected** | **Violation yes/no** | **Major So urces in Drinking Water** |
| **Combined Radium 226 and 228** | 12/7/2017 | pCi/L | 0 | *5* | 2.28±0.77 | no | Erosion of Natural Deposits |
| **Gross Alpha** | 12/712017 | pCi/L | 0 | 15 | 2 .4+1.I | no | Erosion of Natural Deposits |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Contaminant** | **lVlCLG** ' | **MCL** | **Level Detected** | **Source of Contamination** |
| **Sodium (ppm)** | nfa | n/a | ND | Erosion of Natural Deposits |

|  |
| --- |
| **2017 Genesee County Water and Waste Services Detected Contaminants Tables** - **GLWA (Jan.-Nov.2017)** |
| **Regulated Contaminant** | **Units** | **Health Goal****MCLG** | **Allowed Level****MCL** | **Highest Level Detected** | **Range of Detection** | **Violation yes/no** | **Major Sources in Drinking Water** |
| ***2017 INORGANIC Chemicals · Information of the Plant Finished Water Tap*** |
| Fluoride | ppm | 4 | 4 | 0.72 | n/a | no | Erosion of natural deposits; Water additive. which promotes strong teeth; Dischargefrom fertilizer and aluminum factories. |
| Barium | ppm | 2 | 2 | 0.0l | n/a | no | Discharge of drilling waste; Discharge from metal refineries; erosion of natural deposits. |
| Nitrate | ppm | 10 | 10 | 0.34 | n/a | no | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of naturaldeposits. |
| Sodium (optional) | ppm | n/a | n/a | 4.46 | n/a | no | Erosion of natural deposits. |
| ***2011 DISINFECTION Residual*** & ***By-Product Monitoring in Distribution System/OrganicCarbon/Turbidity*** |
| TotalTriHalonmethanes(Tnl M) | ppb | n/a | 80 | LRAA 35.2 | 9.3 to 57.8 | no | By-product of drinking water chlorination |
| HaloaceticAcids(HAA5) | ppb | n/a | 60 | LRAA 17 | *5* to 17 | no | By-product of drinking water disinfection |
| Disinfectant (Total Chlorine residual) | ppm | MRDGL4 | MRDL 4 | RAA 0.7 | 0.2 to l.60 | no | Water additive used to control microbes |
| Total Organic Carbon | Treatment Technique: The Total Organic Carbon (TOC) removal is calculated as the ratio between the actual TOC removal and the TOC removal requirements. The TOC wasmeasured each month and because the level was low, there is no measirement for TOC removal | Erosion of natural deposits. |
| Turbidity (NTU) | Highest single measurement cannot exceed I NTU: 0.29 NTU highest detected Lowest monthly% of Samples Meeting Turbidity Limit of 0.3 NTU (Minimum 95%) | no | Soil Run Off |
| Turbidity is a measure of the cloudiness of water. It is monitored because it is a good indicator of the effectiveness of the filtration system. |
| ***2 017 MICROBIOLOGICAL CONTAMINANTS*** - ***Monthly Monitoring in Distribution System*** |
| Total Coliform Bacteria (% positive samples/ month) | % | 0 | *>5%* of monthly samples | l.l | n/a | no | Naturally present in the environment. |
| E.coli Bacteria (#positive samples) | # | 0 | 0 | 0 | n/a | no | Human and animal fecal waste. |
| A violation occurs when a routine sample and repeat sample, in any given month, are total coliform positive, and one is also E-coli positive. |
|  |
| ***2017 LEAD AND COPPER MONITORING at CUSTOMER'S TAP*** |
| **Regulated Contaminants** | **Test Date** | **Unit** | **Health Goal MCLG** | **Action Level AL** | **90th Percentile Value** | **Number or Samples Over AL** | **Violation Yes/No** | **Major Sources in Drinking Water** |
| Lead | 2017 | ppb | 0 | 15 | 0 | 0 | no | Corrosion of Household Plumbing Erosion of natural deposits. |
| Copper | 2017 | ppm | 1.3 | 1.3 | 0.01 | 0 | no | Corrosion of Household Plumbing System; Erosion of natural deposits; leaching wood preservatives. |
| Combined Radium, 5/23120 l4 Radium 226 & 228 | pCi/L | 0 | 5 | n/a | Level Detected 0.86+ or -0.55 | no | Erosion of 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 con iders adverse health effects, the occurrence of the contaminant in drinking water, and whether the regulation would reduce health risk. GCDC began monitoring for 28 unregulated contaminants in 20I.I . The following tables list the unregulated substance detected during the O1.1 & *20*! 4 calendar years.

|  |
| --- |
| ***2013-2014 Unregulated Contaminants*** - ***Monitoring at the Source*** |
| **Contaminant** | **Unit** | **Range** | **Source** |
| Strontium | ppb | 88.3-110 | Erosion of natural deposits. |
| Hexavalent Chromium | ppb | 0.076-0.13 | Discharge from steel and pulp mills; Erosion of natural deposits. |
| Total Chromium | ppb | 0.23-0A6 | Discharge from steel and pulp mills; Erosion of natural deposits. |
| Vanadium | ppb | ND-0.32 | Erosion of natural deposits. |
|  |
| ***2013-2014 Unregulated Contaminants*** - ***Monitoring at the Distribution Source*** |
| **Contaminant** | **Unit** | **Range** | **Source** |
| Strontium | ppb | 97.2-106 | Erosion of natural deposit.s |
| Hexavalent Chromium | ppb | 0.082-0.1 | Discharge from steel and pulp mills; Erosion of natural deposits. |
| Total Chromium | ppb | 0.22-0.34 | Discharge from steel and pulp mills; Erosion of natural deposits. |
| Vanadium | ppb | ND-0.23 | Erosion of natural deposits. |

**IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER**

#### Genesee County Drain Commissioner-WWS Water System Did Not Meet Treatment Requirements

Our water system recently violated a drinking water treatment technique requirement

It does not require that you take any action. As our customers, you have a right to know what happened, what you should do, and what we have done to correct this situation.

We treat our water to control corrosion and prevent lead and copper in the pipes from dissolving into the water. To ensure we're optimizing corrosion control, we routinely sample the water before it enters the distribution system for water quality parameters specifically orthophosphate and pH.We are required to maintain these parameters within state-designated ranges. While we were unable to always maintain the directed dosage, of

2.1 mg/L orthophosphate, we were able to consistently feed some into the system. We also consistently added lime to raise pH which is an additional method of treatment for corrosion control.

**What should I do?**

No actions need to be taken. However, if you have specific health concerns, consult your doctor.

**What does this mean?**

This situation does not require that you take any action. If it had, you would have been notified immediately. This is a treatment violation but does not mean there is lead or copper in your drinking water. In fact, the most recent monitoring indicates that lead and copper levels were below the action levels set by the EPA in at least 90% of residential drinking water taps sampled. During the period when we added phosphate at a reduced rate, we maintained an aggressive investigative sampling regime which indicated NO lead or copper levels near or at the EPA established levels. Also, we are monitoring for lead and other water quality indicators on a regular basis. It is important that we take measures to control lead and copper levels in the water, because ingesting lead or copper can cause serious health consequences.

*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.*

*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 disea se should consult their personal doctor.*

**What happened? What is being done?**

On two consecutive delivery dates, the supplier provided the wrong phosphate product and these shipments were rejected. Efforts to obtain reliable deliveries of the specified ortho-phosphate product were not successful. As a result, the water plant was unable to meet the required dosage minimum of 2.1 mg/L of phosphate for 15 days during the first three months of the year. The Division has sought and selected vendors of an alternative product which required some piping changes at our facility. Temporary piping was installed as quickly as possible to return to compliance with the State-mandated phosphate level.

The second element of our corrosion control strategy, that of elevating the pH, was not interrupted by the phosphate shortage. This issue has been resolved.

For more information, please contact **Kevin Vansickle at (810) 793-5123 or** **KVansickle@gcdcwws.com**

*Please share this information with all the other people who drink this water, especiafly those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in* a *public place or distributing copies by hand or mail.*

This notice is being sent to you by the Genesee County Drain Commissioner located at 4414 Stanley Road, Columbiaville, Ml 48421.

CERTIFICATlON: WSSN:02615