

## Description of the Water Treatment Process

Your water is treated in a "treatment train" (a series of processes applied in a sequence) that includes coagulation, flocculation, sedimentation, filtration and disinfection. Coagulation removes dirt and other particles suspended in the source water by adding chemicals (coagulants) to form tiny sticky particles called "floc," which attract the dirt particles. Flocculation (the formation of larger flocs from smaller flocs) is achieved using gentle, constant mixing. The heavy particles settle naturally out of the water in a sedimentation basin. The clear water then moves to the filtration process where the water passes through sand, gravel, charcoal or other filters that remove even smaller particles. A small amount of chlorine is used to kill and/or inactivate bacteria and other microorganisms (viruses, cysts, etc.) that may be in the water, before the water is stored and distributed to homes and businesses in the community. In order to ensure that tap water is safe to drink, USEPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

## Source Water Protection Tips

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides – they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public wastewater system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use EPA's Adopt Your Watershed to locate groups in your community, or visit the Watershed Information Network's How to Start a Watershed Team.
- Organize a storm drain stenciling project with your local government or water supplier. Stencil a message next to the street drain reminding people "Dump No Waste - Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.

## Cross Connection Control Survey

The purpose of this survey is to determine whether a cross-connection may exist at your home or business. A cross connection is an unprotected or improper connection to a public water distribution system that may cause contamination or pollution to enter the system. The customer is responsible to conform to cross-connection control regulations. We are responsible for enforcing cross-connection control regulations and insuring that no contaminants can, under any flow conditions, enter the distribution system. If you have any of the devices listed below please contact us so that we can discuss the issue, and if needed, survey your connection and assist you in isolating it if necessary.

- Boiler/ Radiant heater (water heaters not included)
- Pool or hot tub (whirlpool tubs not included)
- Decorative pond
- Tanks with make-up water
- Booster pump
- Underground lawn sprinkler system
- Additional source(s) of water on the property
- Watering trough
- Cooling towers

## Revised Total Coliform Rule (RTCR)

This Consumer Confidence Report (CCR) reflects changes in drinking water regulatory requirements during 2016. All water systems were required to comply with the Total Coliform Rule from 1989 to March 31, 2016, and begin compliance with a new rule, the Revised Total Coliform Rule, on April 1, 2016. The new rule maintains the purpose to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of total coliform bacteria, which includes E. coli bacteria. The U.S. EPA anticipates greater public health protection under the new rule, as it requires water systems that are vulnerable to microbial contamination to identify and fix problems. As a result, under the new rule there is no longer a maximum contaminant level violation for multiple total coliform detections. Instead, the new rule requires water systems that exceed a specified frequency of total coliform occurrences to conduct an assessment to determine if any significant deficiencies exist. If found, these must be corrected by the PWS.

## Important Telephone Numbers

Greenville Water Plant.....548-2415  
Utilities Office.....548-1815  
Safety/Service Director.....548-1819

# City of Greenville 2016 Water Quality Report



## Is My Water Safe?

The City of Greenville is pleased to present to you this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies. Our goal is to provide you with a safe and dependable supply of drinking water.

The City of Greenville Water Treatment Plant routinely monitors for contaminants in your drinking water according to Federal and State laws. The table on page 2 shows the results of our monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2016. We also test for many other chemicals annually, but none of these were detectable in our water supply. The City of Greenville Water Department had no violations for 2016 monitoring year.

We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. In 2016, we implemented the Long-Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) sampling plan, installed a new river pump, bulk water station was completed, lime operations were upgraded, completed Phase II & III of the chlorine system project and the Ohio Environmental Protection Agency (OEPA) approved the Revised Total Coliform Rule Sampling Plan.

## Do I Need to Take Special Precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-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 health care providers. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

## Where Does My Water Come From?

The City of Greenville has two sources of water, the Greenville Creek and eight wells located East and South of the treatment plant. Seventy-eight percent of the water we treat is from Greenville Creek. During periods of high turbidity in the stream, groundwater from the wells is utilized. City of Greenville has an endorsed Wellhead Protection Plan and Source Water Assessment Plan.

## How Can I Get Involved?

If you have any questions about this report or concerning your water utility, please contact Gary J. Evans II (Water Superintendent) at 548-2415 between 7am and 3pm Monday through Friday. If you want to learn more, please attend any of our regularly scheduled City Council meetings at the Municipal Building located at 100 Public Square. They are held on the first and third Tuesday of each month at 7:30 pm.

In the table on page 2 you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Parts per million (ppm) or Milligrams per liter (mg/L) – One part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter (µg/L) – One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Less Than – <

Nephelometric Turbidity Unit (NTU) – Nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person. It is also a good indicator of the effectiveness of the filtration system.

Total Organic Carbon (TOC) – The value reported under "Level Found" for Total Organic Carbon (TOC) is the lowest ratio between percent of TOC actually removed to the percentage of TOC required to be removed. A value of greater than or equal to one (1) indicates that the water system is in compliance with TOC removal requirements. A value of less than one (1) indicates a violation of the TOC removal requirements.

Unregulated Contaminants – Unregulated contaminants are those for which 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.

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

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

Maximum Contaminant Level (MCL) - 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.

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

Maximum Residual Disinfectant Level (MRDL) - The highest level of a disinfectant allowed.

Maximum Residual Disinfectant Goal (MRDG) - The level of a residual disinfectant below which there is no known or expected risk to health

NA - Not applicable

## Turbidity in Drinking Water

Turbidity is a measure of the cloudiness of water and is an indication of the effectiveness of our filtration system. The turbidity limit set by the EPA is 0.3 NTU in 95% of the daily samples and shall not exceed 5 NTU at any time. As reported on the next page, Greenville Public Water System highest recorded turbidity result for 2016 was 0.23 NTU and lowest monthly percentage of samples meeting the turbidity limits was 99.9%.

# Water Quality Data Table

Contaminants (Units)	MCLG	MCL	Level Found	Range of Detections	Violation	Sample Year	Typical Source of Contaminants
<b>Inorganic Contaminants</b>							
Nitrate (ppm)	10	10	4.40	<.10 – 4.40	No	2016	Runoff from fertilizer use; Erosion of natural deposits
Lead (ppb)	0	AL = 15	<5.0	<5.0 – 14.2	No	2016	Corrosion of household plumbing.
							Zero out of thirty samples was found to have lead levels in excess of the lead Action Level of 15 ppb.
Copper (ppm)	1.3	AL = 1.3	<0.050	<.050 - 0.179	No	2016	Corrosion of household plumbing.
							Zero out of thirty samples was found to have copper levels in excess of the copper Action Level of 1.3 ppm.
Fluoride (ppm)	4	4	.30	NA	No	2016	Erosion of natural deposits; discharge from aluminum and fertilizer factories; water additive
<b>Disinfection By-Products</b>							
Total Organic Carbon	NA	TT <1	1	1 – 1	No	2016	Naturally present in the environment
Total Trihalomethanes TTHMs (ppb)	NA	80	58.10	22.50 – 79.50	No	2016	By-product of drinking water chlorination
Haloacetic Acids HAA5 (ppb)	NA	60	14.80	6.80 – 20.80	No	2016	By-product of drinking water chlorination
<b>Microbiological</b>							
Total Coliform Bacteria	0	1	0	0	No	2016	Naturally present in the environment
<b>Turbidity</b>							
Turbidity (NTU)	NA	TT = 1 NTU	0.23	0.02-0.23	No	2016	Soil runoff
% Meeting Standard	NA	TT = 95%	99.9%	99.9%-100%	No	2016	

Contaminants (Units)	MRDLG	MRDL	Level Found	Range of Detections	Violation	Sample Year	Typical Source of Contaminants
<b>Residual Disinfectants</b>							
Total Chlorine (ppm)	4	4	1.43	1.06 – 1.49	No	2016	Water additive used to control microbes

Unregulated Contaminants (Units)	MCL	Average	Level Found	Range of Detections	Violation	Sample Year	Typical Source of Contaminants
Chloride (ppm)	NA	NA	36.00	NA	No	2016	Erosion of natural deposits
Sulfate (ppm)	NA	NA	96.00	NA	No	2016	Erosion of natural deposits
Sodium (ppm)	NA	NA	37.9	NA	No	2016	Erosion of natural deposits; leaching
<b>UCMR3 (If further review of the data is desired or if there are questions then contact the Water Plant)</b>							
Chromium (total chromium)(ppb)		0.245	NA	<0.2-0.349	No	2014	As part of an on-going evaluation program the EPA has required us to monitor some additional contaminants/chemicals. Information collected through the monitoring of these contaminants/chemicals will help to ensure that future decisions on drinking water standards are based on sound science.
Chromium-6 (ppb)		0.213	NA	0.095-0.282	No	2014	
Molybdenum (ppb)		5.051	NA	4.629-5.607	No	2014	
Strontium (ppb)		269.27	NA	212.59-293.62	No	2014	
Vanadium (ppb)		0.362	NA	0.283-0.513	No	2014	

## License to Operate Status

We have a current, unconditioned license to operate our water system.

### Why Are There Contaminants in My Drinking 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 the 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 Water Hotline at 1-800-426-4791. The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoir, 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.

For the purpose of source water assessments, all surface waters are considered to be susceptible to contamination. By their nature, surface waters are open systems with no confining layer to impede contaminant or pathogen movement and have relatively short travel times from source to intake. Based on the information compiled, the Greenville Source Water Protection Area has a high susceptibility to contamination from agriculture, residential, and commercial sources, and from accidental releases and spills. It is important to note that this assessment is based on available data, and therefore may not reflect current conditions in all cases. Water quality, land uses, and other activities that are potential sources of contamination may change with time. A copy of the source water assessment can be found at:

<http://wwwapp.epa.ohio.gov/gis/swpa/OH1900714.pdf>

Contaminants that may be present in source water include:

- Microbiological 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 chemicals*, 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 materials*, which can be naturally occurring or be the result of oil and gas production and mining activities. Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation.

As you can see by the table, our system had no violations. We're proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some contaminants have been detected. The EPA has determined that your water IS SAFE at these levels.

### Cryptosporidium in Drinking Water

City of Greenville Water Department monitored for *Cryptosporidium* in the raw water during 2016. *Cryptosporidium* was detected in 9 of 12 samples collected from the source water. *Cryptosporidium* is a microbial pathogen found in surface water throughout the U.S. Although filtration removes *Cryptosporidium*, the most commonly used filtration methods cannot guarantee 100 percent removal. Our monitoring of source water and/or finished water indicate the presence of these organisms. Current test methods do not enable us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea and abdominal cramps.

Most healthy individuals can overcome the disease within a few weeks. However, immunocompromised people are at a greater risk of developing a life threatening illness. We encourage immunocompromised individuals to consult their doctor regarding appropriate precautions to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may be spread through mean other than drinking water.

### Lead in Drinking Water

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. The City of Greenville Water Department 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 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 <http://www.epa.gov/safewater/lead>.