VILLAGE OF GRAFTON
2020
ANNUAL DRINKING WATER QUALITY REPORT

June 2021

WATER QUALITY AND THE UTILITY'S MISSION

The Village's Water Utility is pleased to provide its customers with a detailed summary of the drinking water quality reaching your home and business taps. **Our mission is to provide all of our customers with a safe and dependable supply of drinking water that complies with all state and federal drinking water requirements at comparatively affordable rates.**

YOUR SOURCE OF WATER

The Water Utility currently has five active deep wells with a total supply capacity of 5,700,000 gallons per day. The reliable supply capacity with the Village's highest producing well out-of-service is 4,250,000 gallons per day. The 2020 average daily water pumpage was 956,000 gallons or approximately 17-percent of the total supply capacity. All wells feed into a common water distribution system divided into two separate pressure zones delineated roughly by the railroad tracks running north to south through the Village.

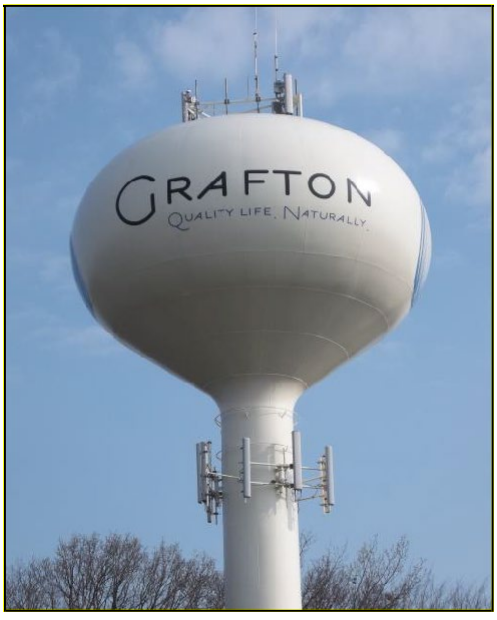
The Village's water supply is of high quality. At some well sites the source water is treated to improve characteristics and to meet safe drinking water standards. Chlorine is added at all municipal wells to disinfect the water. Fluoride is added at all municipal wells to prevent dental tooth decay. Phosphates are added at three of the five wells to alleviate iron issues and scale formation. An air stripping treatment process has been implemented at two wells for the removal of low levels of volatile organic chemicals (VOC).

All five of Grafton's active municipal wells draw source water from the Niagara dolomite aquifer. Water hardness forms when water passes through this aquifer and minerals such as magnesium and calcium are dissolved into the water. The Grafton water supply contains approximately 22 grains of hardness. Property owners may wish to treat the hard water with the use of a high-efficiency water softener.

UTILITY PLANNING AND WATER CONSERVATION

The Water Utility continues to plan for future water system improvements and expansion per the recommendations of our 2016 Water System Master Plan. The Plan provides the Utility with a roadmap to follow relative to providing adequate levels of municipal water service through the year 2035. The Water Utility will be re-visiting the Plan in 2021 and updating it as necessary.

Water conservation remains an important component of maintaining a reliable source of quality drinking water in the Village. Conserving this critical resource allows the Utility to keep water rates stable with minimal and infrequent price increases. Water conservation helps reduce the overall cost for sanitary sewer service charges as well.



EDUCATIONAL INFORMATION

The sources of drinking water for both tap water and bottled water include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in groundwater sources include:

1. Microbial contaminants such as viruses and bacteria which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
2. Inorganic contaminants such as salts and metals which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
3. Pesticides and herbicides which may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.
4. 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 stormwater runoff and septic systems.
5. Radioactive contaminants which can be naturally occurring or be the result of oil and gas production and mining activities.

All drinking water including bottled water may be expected to contain at least small traces of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. The Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in drinking water provided by public water systems in order to ensure that tap water is safe to drink. Alternately, Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same level of protection for public health.

IMPORTANT HEALTH INFORMATION

Some people are more vulnerable to contaminants in drinking water than the general population, especially those whose immune systems have been compromised by disease or medical treatment. Individuals undergoing cancer treatment, those who have undergone organ transplants, people with HIV/AIDS, the elderly and infants may be particularly at risk from infections due to weakened immune systems. Those at risk should consult with their primary health care providers. Guidelines on appropriate means to lessen the risk of infection by microbiological contaminants are available from the EPA's Safe Drinking Water Hotline toll-free at (800) 426-4791 or by visiting www.epa.gov/safewater

ADDITIONAL HEALTH INFORMATION: LEAD

Elevated levels of **lead** can be particularly harmful to infants, young children and pregnant women if present in a drinking water supply. The lead present in drinking water comes from various materials and related components used in the construction and assembly of water services and a property's interior plumbing. Infants and children who drink water containing lead concentrations in excess of EPA action levels could potentially experience delays in their physical and/or mental development.

WATER PUMPAGE & QUALITY INFO

The 2020 maximum daily water pumpage occurred on 10/11/2020 (1.711 MG). The minimum daily pumpage was on 10/29/2020 (0.534 MG).

For 2020, the month with the highest average daily water demand was July (1.439 MG) The month with the lowest average daily demand was April (0.968 MG).

Well #6 was the Village's largest producing well. In 2020 it delivered 138 MG.

Of the total 348.7 MG of water pumped in 2020, 66-percent of the total volume was supplied to the Village's west side pressure zone and 34-percent to the east side pressure zone.

In 2020, the Utility collected 120 bacteriological samples from the Village's water distribution system and another 20 samples from the five Village well sites. All 140 bacteriological samples tested safe.

Average 2020 water system residual values reported: fluoride (0.71 ppm), free available chlorine (0.41 ppm), and polyphosphate (0.43 ppm).

Commonly requested water system inorganic average values: hardness (377 ppm), iron (0.2 ppm), chloride (30 ppm), sodium (24 ppm), and nitrates (0.9 ppm).

Sodium Hypochlorite is fed into the Village's drinking water supply at all municipal well site locations for disinfection purposes.

ADDITIONAL HEALTH INFORMATION: LEAD; continued

Lead concentrations may accumulate over time as drinking water sits idle from non-use in plumbing fixtures. It is recommended that water customers flush these same fixtures for up to 2 minutes prior to any drinking or cooking use in order to minimize the potential for lead exposure. You may wish to have your water tested if you are unsure of the presence of lead in your drinking water,. The Water Utility can assist its customers with obtaining proper lead testing kits. Information on lead in drinking water and what steps can be taken to minimize exposure is available by calling the EPA's Safe Drinking Water Hotline toll-free at (800) 426-4791 or by visiting www.epa.gov/safewater/lead.

DRINKING WATER TEST RESULTS

Contaminants (Units)	MCL	MCLG	Max. Level Found	Range	Sample Date (prior to 2020)	Violation	Typical Source of Contamination
Inorganic Contaminants							
Arsenic, ppb	10	0	4.5	0.14 – 4.5		No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium, ppb	2000	2000	150	49.0 – 150		No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper, ppb	AL= 1300	1300	710 (90%)	2 of 30 results > AL		No	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Fluoride, ppm	4	4	0.76	0.43 – 1.6		No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead, ppb	AL= 15	0	3.3 (90%)	0 of 30 results > AL		No	Corrosion of household plumbing systems; erosion of natural deposits
Nickel, ppb	100	N/A	1.1	0.9– 1.1		No	Naturally occurs in soils, ground water, and surface waters; used in electroplating, stainless steel and alloy products
Nitrate (NO3-N), ppm	10	10	2.3	0.15 – 2.3		No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium, ppm	N/A	N/A	23.0	11.0- 23.0		No	N/A
Thallium, ppb	2.0	2.0	0.28	0.00 – 0.28		No	Heavy metal found in trace amounts within the earth's crust; not found free within the environment
Volatile Organic Chemicals							
Bromodichloro-methane, ppb	80	0	5.3	0.0 – 5.3		No	By-product of drinking water chlorination
Bromoform, ppb	80	0	1.6	0.0 – 1.6		No	By-product of drinking water chlorination
Chloroform, ppb	80	N/A	3.8	0.0 – 3.8		No	By-product of drinking water chlorination
Dibromochloro-methane, ppb	80	N/A	5.3	0.0 – 5.3		No	By-product of drinking water chlorination
1,1,1 – Trichloroethane, ppb	200	200	7.5	0.0 – 7.5		No	Discharge from metal degreasing sites and other factories
1,1 Dichloroethylene, ppb	7	7	1.9	0.0 – 1.9		No	Discharge from industrial chemical factories
Cis 1,2 – Dichloro-ethylene, ppb	70	70	1.5	0.0 – 1.5		No	Discharge from industrial chemical factories
Tetrachloroethylene, ppb	5	0	0.42	0.0 – 0.42		No	Leaching from PVC pipes; discharge from factories and dry cleaners
Trichloroethylene, ppb	5	0	4.0	0.0 – 4.0		No	Discharge from metal degreasing sites and other factories
Carbon Tetrachloride, ppb	5	0	0.0	0.0 – 0.0		No	Discharge from chemical plants and other industrial activities
Vinyl Chloride, ppb	0.2	0	0.0	0.0 – 0.0		No	Leaching from PVC pipes; discharge from plastic factories

DRINKING WATER TEST RESULTS

Contaminants (Units)	MCL	MCLG	Max. Level Found	Range	Sample Date (prior to 2020)	Violation	Typical Source of Contamination
Disinfection Byproducts							
TTHM, ppb	80	0	16.0	14.0 – 16.0		No	By-product of drinking water chlorination
HAA5, ppb	60	60	5.3	1.3 – 5.3		No	By-product of drinking water chlorination
Radioactive Contaminants							
Gross Alpha Uranium & Radon, pCi/L	30	0	1.42	1.42 +/-1.55		No	Erosion of natural deposits
Radium 228, total pCi/L	5	0	0.607	0.607 +/-0.334		No	Erosion of natural deposits
Unregulated Contaminants							
Sulfate, ppm	N/A	N/A	54.0	26.0 – 54.0	3/16/2017	No	Occurs naturally in many minerals within soils and rock formations containing groundwater
1,4-Dioxane, ppb	N/A	N/A	2.4	0.0 – 2.4	5/26/2015	No	Commercially produced stabilizer and solvent; released through spills and illegal disposal
Isopropyl benzene, ppb	N/A	N/A	0.22	0.13 – 0.22	5/26/2015	No	Organic compound commonly found in crude oil and refined fuels
Methyl-tert-butyl-ether, ppb	N/A	N/A	0.18	0.18	9/8/2015	No	Leaking underground and above ground fuel storage tanks, refueling spills and pipeline failure
Chlorate, ppb	N/A	N/A	140	0.0 - 140	5/26/2015	No	By-product of drinking water chlorination
Molybdenum, ppb	N/A	N/A	1.8	0.0 – 1.8	5/26/2015	No	Naturally occurring in soils at low levels
Strontium, ppb	N/A	N/A	2400	339 – 2400	5/26/2015	No	Naturally occurring within various soil minerals
Hexavalant chromium, ppb	N/A	N/A	0.046	0.0 – 0.46	5/26/2015	No	Man-made chemical compound commonly found in pigments, metal finishing and wood preservatives
1,1-Dichloroethane, ppb	N/A	N/A	0.71	0.0 – 0.71		No	Used in the manufacture of various chemicals, use as a solvent, previous use as an anesthetic
Manganese, ppb	N/A	N/A	31.0	0.0 – 31.0	3/20/2018, 9/17/2018 & 9/26/2018	No	Metal not found freely in the environment; used as metal alloy in production of stainless steel
Monochloroacetic acid, ppb	N/A	N/A	0.0	0.0 – 0.0		No	By-product of drinking water chlorination
Bromochloroacetic acid, ppb	N/A	N/A	1.9	1.4 – 1.9	3/20/2018 & 9/17/2018	No	By-product of drinking water chlorination
Bromodichloroacetic acid, ppb	N/A	N/A	1.9	1.3 – 1.9	3/20/2018 & 9/17/2018	No	By-product of drinking water chlorination
Chlorodibromoacetic acid, ppb	N/A	N/A	0.98	0.61 – 0.98	3/20/2018 & 9/17/2018	No	By-product of drinking water chlorination
Monobromoacetic acid, ppb	N/A	N/A	0.64	0.0 – 0.64	3/20/2018 & 9/17/2018	No	By-product of drinking water chlorination; used in printing operations and plastics manufacturing
Dibromoacetic acid, ppb	N/A	N/A	1.7	0.91- 1.7	3/20/2018 & 9/17/2018	No	By-product of drinking water chlorination
Dichloroacetic acid, ppb	N/A	N/A	1.6	1.3 – 1.6	3/20/2018 & 9/17/2018	No	By-product of drinking water chlorination; used for cosmetic treatments and as topical medications
Trichloroacetic acid, ppb	N/A	N/A	0.57	0.0 – 0.57	3/20/2018 & 9/17/2018	No	By-product of drinking water chlorination; used for cosmetic treatments and as topical medications
Tribromoacetic acid, ppb	N/A	N/A	0.0	0.0 – 0.0	3/20/2018 & 9/17/2018	No	By-product of drinking water chlorination
HAA6Br, ppb	N/A	N/A	6.5	4.8– 6.5	9/17/2018	No	By-product of drinking water chlorination
HAA9, ppb	N/A	N/A	8.1	6.7– 8.1	9/17/2018	No	By-product of drinking water chlorination

NOTE: Unregulated contaminants are those for which the EPA has not yet established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in public drinking water supplies and whether future regulation via maximum contaminant levels (MCL) is warranted. The EPA requires all public water systems to periodically participate in this unregulated contaminant monitoring and reporting.

DETECTED CONTAMINANTS

The Village of Grafton's water supply was tested for a fairly significant number of contaminants in 2020 and even more so over the previous 5 years. Many of these contaminants are tested on a quarterly basis, but others are sampled on a less frequent semi-annual, annual or tri-annual basis. The contaminants listed above in the tables were detected in the Village's water supply either at well entry point locations or out within the Village's water distribution system. A contaminant will appear in the tables without a sample date if it was detected in 2020. If the contaminant was not monitored last year, but was detected in the last 5 years of compliance sampling, it will appear in the tables along with the actual sample date.

SUMMARY OF WATER QUALITY DATA

The Water Utility routinely monitors your drinking water according to Federal and State regulations. The water quality table included with this report shows the results of our treated water supply monitoring for the period of January 1 to December 31, 2020 unless a prior sampling date is identified. The table includes many scientific terms and acronyms. The following definitions may help clarify the data presented. Please feel free to contact the Water Utility with any questions you may have.

Acronym	Definition
AL	Action Level - The concentration of a contaminant, which if exceeded, triggers treatment or other regulatory requirements which a water system must follow.
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 within a water system.
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 has occurred or why total coliform bacteria have been found in a water system, or both, on multiple occasions.
MCL	Maximum Contaminant Level - The highest level of a contaminant allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
MCLG	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.
MFL	Million fibers per liter.
MRDL	Maximum Residual Disinfectant Level - The highest level of a disinfectant allowed in drinking water supplies. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
mrem/year	Millirems Per Year - A unit of measurement of radiation absorbed by the body.
ND	No Detection - Laboratory analysis indicates that the constituent is not present in a detectable quantity. Also represented in tables as a unit of measurement equaling 0.00.
NTU	Nephelometric Turbidity Units.
pCi/L	Picocuries Per Liter - A unit of measurement for radioactivity.
ppm	Parts Per Million - Same as milligrams per liter (mg/L). Equivalent to 1-inch over 16 miles.

Term	Definition
ppb	Parts Per Billion - Same as micrograms per liter (ug/L). Equivalent of one 4-inch hamburger; in a chain of hamburgers, circling the earth at the equator 2.5 times.
ppt	Parts Per Trillion - Same as nanograms per liter (ng/L). Equivalent of one drop of dish detergent in enough dishwater to fill a string of railroad tanker cars 10 miles long.
ppq	Parts Per Quadrillion - Same as picograms per liter (pg/L). Equivalent of one postage stamp on a letter the size of California and Oregon combined.
TCR	Total Coliform Rule - The rule requires all public water systems (PWSs) to monitor for the presence of total coliforms in the distribution system at a frequency proportional to the number of people served
TT	Treatment Technique - A required process intended to reduce the level of a contaminant in drinking water supplies.

WHAT DOES THE DATA MEAN?

This report, including all water testing performed, indicates that the Village of Grafton water distribution system had no water quality violations in 2020, and that the drinking water meets or exceeds all Federal and State requirements. We have learned through our extensive monitoring and testing that some contaminants have been detected and these levels or results are also included in the table. However, it is important to note that the EPA; along with the State of Wisconsin Department of Natural Resources (DNR), has determined the Village's water supply is safe per the reported test results.

More information about contaminants and potential health effects may be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791. Drinking water quality information specific to the Village of Grafton water distribution system may also be obtained at http://dnr.wi.gov/topic/DrinkingWater/QualityData.html

WHERE CAN I GET MORE INFORMATION?

If you have additional questions about this annual water quality report, please contact Facility Operations Coordinator Larry Roy at (262) 375-5331. The Water Utility Services Facility is located at 1900 Ninth Avenue in the Village of Grafton. General hours of operation are Monday through Friday from 7:00 a.m. until 3:30 p.m. From the first Monday in May through the last Friday before Labor Day, Utility hours are 6:30 a.m. through 4:00 p.m.; Monday through Thursday and Friday from 6:30 a.m. until 10:30 a.m. If you would like to learn more about Utility activities, please consider attending any of the regularly scheduled monthly meetings of the Village of Grafton Board of Public Works. Meetings are typically held at the Municipal Services Facility, 675 North Green Bay Road on the second Monday of each month beginning at 6:00 p.m.