

2019 WATER QUALITY REPORT

FOR Greenfield Municipal Utilities

This report contains important information regarding the water quality in our water system. The source of our water is groundwater and surface water. Our groundwater is drawn from wells in alluvial aquifers along the Nodaway River West of Greenfield. Our surface water is drawn from Lake Greenfield, Nodaway Lake, and the Nodaway River.

Our water quality testing shows the following results:

CONTAMINANT	MCL-(MCLG)	COMPLIANCE		DATE	VIOLATION	SOURCE
		Type	Value & Range			
Total Trihalomethanes (ppb) [TTHM]	80 (N/A)	LRAA	57.00 (31 - 94)	03/31/2018	No	By-products of drinking water chlorination
Total Haloacetic Acids (ppb) [NAA5]	60 (N/A)	LRAA	38.00 (19 - 42)	06/30/2018	No	By-products of drinking water disinfection
Lead (ppb)	AL=15 (0)	90th	3.00 (ND - 3)	2017	No	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	AL=1.3 (1.3)	90th	0.37 (ND - 0.67)	2017	No	Corrosion of household plumbing systems; Erosion of natural deposits
950 - DISTRIBUTION SYSTEM						
Chlorine (ppm)	MRDL=4.0 (MRDLG=4.0)	RAA	1.79 (1.35 - 1.79)	11/30/2018	No	Water additive used to control microbes
01 - GREENFIELD LAKE & WELLS 1-6						
Sodium (ppm)	N/A (N/A)	SGL	9.1	04/02/2018	No	Erosion of natural deposits; Added to water during treatment process
Fluoride (ppm)	4 (4)	SGL	0.80 (0.35 - 0.80)	2018	No	Water additive which promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Dalapon (ppb)	200 (200)	SGL	0.90	11/30/2015	No	Runoff from herbicide used on ROW
Nitrate [as N] (ppm)	10 (10)	SGL	1.0	2018	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Total Organic Carbon (TOC)	N/A	TT	30.00 (30.00 - 46.94) % removed	2018 Monthly	No	Naturally present in the environment
Turbidity (NTU)	N/A (N/A)	TT	2.498 99.92% of Samples Meet Requirements	2018	Yes	Soil runoff

Note: Contaminants with dates indicate results from the most recent testing done in accordance with regulations.

DEFINITIONS

- 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 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.
- ppb - parts per billion
- ppm - parts per million
- pCi/L - picocuries per liter
- N/A - Not applicable
- ND - Not detected
- NTU - Nephelometric Turbidity Units
- SGL - Single Sample Result
- RTCR - Revised Total Coliform Rule
- RAA - Running Annual Average
- LRAA - Locational Running Annual Average
- TOC - Total Organic Carbon
- Treatment Technique (TT) - A required process intended to reduce the level of a contaminant in drinking water.
- Action Level (AL) - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- Maximum Residual Disinfectant Level Goal (MRDLG) - 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.

- Maximum Residual Disinfectant Level (MRDL) - 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.

GENERAL 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 posed a health risk. More information about contaminants or potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

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 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/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).

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. GREENFIELD MUNICIPAL UTILITIES are 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 or at <http://www.epa.gov/safewater/lead>.

ADDITIONAL HEALTH INFORMATION

If you are caring for an infant, you should ask advice from your health care provider. 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 because of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

OTHER VIOLATIONS

In July 2018 we had a Monthly Combined Filter Effluent Turbidity Requirements Treatment Technique Violation. During this violation time period a blue-green algae bloom was present on the lake. This violation resulted in the issuance of a bottled water advisory that was later changed to a boil water advisory following the receipt of laboratory analytical results that indicated microcystin levels were below the detected limit of 0.2 ug/L. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

SOURCE WATER ASSESSMENT INFORMATION

Greenfield Municipal Utilities obtains some of its water from shallow wells in alluvial aquifers along the Nodaway River west of Greenfield. These alluvial aquifers have been determined to be highly susceptible to contamination from agriculture runoff because the characteristics of the aquifers and the overlying materials provide little protection from contamination at the land surface. The Alluvial wells will be highly susceptible to surface contaminants such as leaking underground storage tanks, contaminant spills, and excess fertilizer application. A detailed evaluation of your source water was completed by the Iowa Department of Natural Resources and is available from the General Manager (641/743-2914). Greenfield Municipal Utilities obtains the remainder of its water from Lake Greenfield & Nodaway Lake. A Source Water Assessment of these lakes has determined that both lakes are highly susceptible to contamination from agriculture runoff because they are surface water supplies. The Howard R. Green Company completed a detailed evaluation of these surface water supplies and is available from the General Manager (641/743-2914).

OTHER INFORMATION

Turbidity is an indicator of treatment filter performance and is regulated as a treatment technique. Total Organic Carbon (TOC) is monitored in the raw water coming into the plant and in the treated water (shown above) leaving the plant, the required percent removal was met according to DNR regulations during the last calendar year.

CONTACT INFORMATION

For questions regarding this information, please contact Scott Tonderum, Greenfield Municipal Utilities General Manager at (641) 743-2914 (7:30-4:30 M-F), FAX (641) 743-6470, or E-mail at scott.tonderum@gmu-ia.com.

Decisions regarding the Greenfield Municipal Utilities water system are made at Board of Trustees meetings normally held at 8:00 AM on the second Tuesday of the month at City Hall and are open to the public. Please contact the office at (641) 743-2183 to confirm the date and time of the next meeting.

Copies of this report are available at City Hall during normal working hours.