Village of Clinton

2018 Drinking Water Quality Report

May 10, 2019

OVERVIEW:

This Water Quality Report is designed to provide information on the Village's water distribution and treatment systems. It provides information on the Source of Water, Water Testing, Terms and Abbreviations, and Test Results.

The Village gets its water from four wells, and treats it with chlorine and polyphosphate. The chlorine is used for disinfection. The polyphosphate sequesters possible sediment build up in the water lines and makes the water less corrosive to your plumbing fixtures. The water is tested for a variety of contaminates on a regular basis. New federal legislation requires the Village to publish a summary of the test results annually to help keep water customers informed about the water they drink.

If you have any questions or concerns about your water utility please contact Mr. Matt Dorr, Department of Public Works, 119 E Michigan Ave., P.O. Drawer E, Clinton, MI 49236. You may also call him at (517) 456-7494 extension 216, or via email at dpw@villageofclinton.org. If you want to learn more, please contact Mr. Dorr to schedule an appointment. You may also receive information by attending the Clinton Village Council meetings held on the first Monday of each month.

SOURCE WATER ASSESSMENT REPORT

Your water comes from four groundwater wells, drawing from the River Raisin watershed. The State performed an assessment of our source water in 2003 to determine the susceptibility, or the relative potential, of contamination. The susceptibility rating is on a six-tiered scale from "very-low" to "high" based primarily on geologic sensitivity, water chemistry, and contaminant sources. The susceptibility of our source is rated moderately high for well field number one and moderate for well field number two and four.

The primary source of water is well number five. Well one is now used as backup during higher usage along with well four. Well two is used only for fire backup capacity. Well depths are well one - 35' deep, well two – 33' deep, well four – 112' deep, and well five – 99' feet deep. Wells one and five have little or no iron, well four has high iron content.

Significant sources of contamination include any possible dumping or leakage within 200' of well field number one, and possible farm run off within 200' of well field number two and four. We are making efforts to protect our sources by taking all necessary security measures and planning to develop more in our wellhead protection plan in the future.

UPDATE ON NEW WELL PROJECT

Due to the loss of water production in Well #1, the Village had the well screen and surrounding gravel pack cleaned in January 2017. As a result of the cleaning and backflow valve failure, the well started to pump sand. Given the age of Well #1, and the sand issues, the Village decided that it was time to abandon the well and locate a new well.

Throughout the fall of 2017 the Village had multiple test well drilled in an attempt to locate a new well to replace Well #1. Unfortunately none of the test wells produced a low iron and high quantity of water. The Village is now in the planning process of building an iron removal plant that would service current Well #2 and #4. The Iron Removal Plant is expected to go on-line in the Spring of 2019.

WATER TOWER MAINTENANCE

In May 2016 the water tower was temporarily taken out of service to sand blast and recoat the inside of the tower.

WATER TESTING

The Village routinely tests the water for contaminants according to Federal and State laws. The results of our monitoring, for the year ending December 31, 2018, met all monitoring requirements for 2018 as per the Michigan Department of Environmental Quality (MDEQ). 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.

As water travels over land or underground, it can pick up substances or contaminants such as microbes, inorganic and organic chemicals, and radioactive substances. Drinking water, including bottled drinking water, may be reasonably 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 EPA's Safe Drinking Water Hotline at (800) 426-4791.

The sources of drinking water, (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 source water:

- Microbial 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 source such as agriculture, urban storm-water runoff, and residential uses.

- 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.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.
- Lead related contaminants, 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 Village of Clinton 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 are available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead. Note: lead has never been detected in any of our raw well water.

In order to ensure that tap water is safe to drink, EPA prescribes regulation 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 the public health.

The state also requires monitoring of some constituents less than annually. There are many constituents that are tested for quarterly, annually, and every third year. Of all the constituents tested, the Village of Clinton's well water had only a few contaminates at the detectable level. Of those, none were at a level of any health concern requiring a change in the treatment process. The Village's drinking water met or exceeded all Federal and State requirements last year.

Minimum Contamination Levels (MCL) are set at very stringent levels. To understand the possible health effected described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

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. The EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants is also available at the Village Office.

TERMS AND ABBREVIATIONS

The table uses many terms and abbreviations you might not be familiar with. To help you better understand these terms, we have provided the following definitions:

- Non-Detect (ND) – Laboratory analysis indicates that the constituent is not present.
- 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 $10,000.00
- Parts per billion (ppb) or Micrograms per liter – One part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.00
- Parts per trillion (ppt) or Nanograms per liter (nanograms/l) – One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in $10,000,000,000.00
- Picocuries per liter (pCi/L) – Picocuries per liter is a measure of the radioactivity in water.
- Action Level – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- Maximum Contaminant Level (MCL) – The "Maximum Allowed" MCL is the highest level of a contaminant that is allowed in drinking water. MCL's are set to the MCLG's as feasible using the best available treatment technology.
- Maximum Contaminant Level Goal (MCLG) – the "Goal" MCLG is 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 Goal (MRDLG) – The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's 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.
- ND – Not detected
- NA – Not applicable

The Village of Clinton strives to provide top quality water. We ask that all of our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.

Respectfully Submitted,

Matt Dorr

Mr. Matthew Dorr

DPW Superintendent / Water Operator in Charge

Unregulated Contaminants	Violation Y/N	Level Detected	Range of Detection	Date of Sampling	Likely Source of Contamination
WELL 1					
1 Chloride (ppm)	N	111 ppm	4 ppm	2016	Naturally Present
2 Hardness as CaCO3 (ppm)	N	408 ppm	20 ppm	2016	Naturally Present
3 Iron (ppm)	N	ND	0.1 ppm	2016	Naturally Present
4 Sodium (ppm)	N	44 ppm	5 ppm	2016	Naturally Present
WELL 2					
1 Chloride (ppm)	N	28 ppm	4 ppm	2018	Naturally Present
2 Hardness as CaCO3 (ppm)	N	333 ppm	20 ppm	2018	Naturally Present
3 Iron (ppm)	N	1.9 ppm	0.1 ppm	2018	Naturally Present
4 Sodium (ppm)	N	11 ppm	5 ppm	2018	Naturally Present
WELL 4					
1 Chloride (ppm)	N	30 ppm	4 ppm	2018	Naturally Present
2 Hardness as CaCO3 (ppm)	N	325 ppm	20 ppm	2018	Naturally Present
3 Iron (ppm)	N	1.5 ppm	0.1 ppm	2018	Naturally Present
4 Sodium (ppm)	N	15 ppm	5 ppm	2018	Naturally Present
WELL 5					
1 Chloride (ppm)		74 ppm	4 ppm	2018	Naturally Present
2 Hardness as CaCO3 (ppm)		310 ppm	20 ppm	2018	Naturally Present
3 Iron (ppm)		ND	.1 ppm	2018	Naturally Present
4 Sodium (ppm)		44 ppm	5 ppm	2018	Naturally Present

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

Detected Inorganic Contaminants	Violation Y/N	Level Detected	Range of Detection	Date of Sampling	MCLG	MCL	Likely Source of Contamination
1 Copper (ppb)	N	500 ppb	0 homes > AL	2017		AL=1300 ppb	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
2 Lead (ppb)	N	1 ppb	0 homes > AL	2017	0	AL=15 ppb	Corrosion of household plumbing systems, erosion of natural deposits
3 Nitrate (as Nitrogen) (ppm)	N	2.0 ppm -Well 1 ND-Well 4 ND-Well 2 ND-Well 5	ND - 10.0 ppm	2016 2018 2018 2018	10 ppm	10 ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
4 Fluoride (ppm)	N	0.51 ppm-Well 5 0.31 ppm-Well 4 0.38 ppm-Well 2	0.1 - 4.0 ppm	2018 2018 2018	4 ppm	4 ppm	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
5 Arsenic	N	ND-Well 1 ND-Well 4 .005 ppm-Well 5	0.002 ppm	2016 2013 2013	0	0.01 ppm	Erosion of natural deposits; Runoff from orchards; runoff from glass electronics production wastes.
6 Barium	N	0.18-Well 2 0.19-Well 4	0.01 ppm	2018 2018	0	2 ppm	Erosion of natural deposits; Runoff from orchards; runoff from glass electronics production wastes.

Detected Volatile Organic Compounds	Violation Y/N	Level Detected	Range of Detection	Date of Sampling	MCLG	MCL	Likely Source of Contamination
1 Total Trihalomethanes	N	0.0007 ppm - Well 1	N/A	2018		AL=.080 ppm	By-product of Drinking Water Chlorination
2 Chloroform	N	0.0007 ppm - Well 1	.0005 ppm - 1	2018		AL=.080 ppm	By-product of Drinking Water Chlorination

Disinfectant Byproducts: Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5)	Violation Y/N	Level Detected	Range of Detection	Date of Sampling	MCLG	MCL	Likely Source of Contamination
TTM Site 1 (ppm)	N	.0005 ppm	11 - 12 ppm	2018	NA	0.08 ppm	By-product of Drinking Water Chlorination
HAA5 Site 1 (ppm)	N	ND	ND-2 ppm	2018	NA	0.06 ppm	By-product of Drinking Water Chlorination
Chloroform	N	0.0005 ppm	ND-.0005 ppm	2018	NA	0.08 ppm	By-product of Drinking Water Chlorination

Chlorine Residual Chlorine or Chloramines	Violation Y/N	Level Detected	Range of Detection	Date of Sampling	MRDL	MRDLG	Likely Source of Contamination
Bacteriological Sample Site #1	N	0.04 ppm	0 - .56 ppm	2018	4 ppm	4 ppm	Water additive used to control miocrobes
Bacteriological Sample Site #2	N	0.03 ppm	0 -.41 ppm	2018	4 ppm	4 ppm	Water additive used to control miocrobes
Monthly Average of Samples	N	0.04 ppm		2018	4 ppm	4 ppm	
RAA Computed Quarterly	N	0.04 ppm		2018	4 ppm	4 ppm	

Chlorine Residual (entire chart is ppm) **Chlorine or Chloramines**	J	F	M	A	M	J	J	A	S	O	N	D
Bacteriological Sample Site #1	0.01	0.10	0.01	0.03	0.03	0.02	0.04	0.08	0.03	0.02	0.03	0.06
Bacteriological Sample Site #2	0.06	0.03	0.01	0.01	0.06	0.03	0.02	0.01	0.02	0.01	0.04	0.01
Monthly Average of Samples	0.04	0.07	0.04	0.02	0.07	0.03	0.03	0.05	0.03	0.02	0.04	0.03
RAA Computed Quarterly			0.04			0.04			0.04			0.04

Maximum residual level chlorine is 4.0 ppm

PFAS (Per- and Polyfluoroalkyl Substances) testing was completed in 2018, and registered as a ND (Non-Detect)