Annual Drinking Water Quality Report for 2019
Village of Tupper Lake
Water Department
53 Park Street, Tupper Lake, NY 12986
(Public Water Supply ID#1600012)

INTRODUCTION

To comply with State regulations, the Village of Tupper Lake will be annually issuing a report describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect our drinking water sources. Last year we conducted tests for over 80 contaminants. We detected some of those contaminants and found Total Trihalomethane and Haloacetic Acid disinfection byproducts at levels higher than the State allows. Over the past year, we have sent out public notifications of these water quality violations. We are currently working to eliminate these violations and improve water quality by drilling wells that will replace Tupper Lake as a source of water for the Village, and we anticipate that the new wells will go on-line by the Summer of 2018. This report provides an overview of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to State standards. If you have any questions about this report or concerning your drinking water, please contact Mr. Mark Robillard, Water/Wastewater Superintendent at (518) 359-3341. We want you to be informed about your drinking water. If you want to learn more, please attend any of our regularly scheduled village board meetings. The meetings are held on the third Monday of each month at 6:00 p.m. at the Village Office at 53 Park Street, Tupper Lake.

WHERE DOES OUR WATER COME FROM?

In general, 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 can pick up substances resulting from the presence of animals or from human activities. Contaminants that may be present in source water include microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. In order to ensure that tap water is safe to drink, the State and the EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Our water source includes two new groundwater wells in combination with surface water drawn from Little Simon Pond. The two new wells are each rated at 800 gallons per minute, are located near Pitchfork Pond on Kildare Road, and were placed online in June 2018. The Tupper Lake surface water filtration plant was taken offline in June 2018. The Little Simon Pond surface water source is still connected to the system, and the water intake extends approximately 150 feet into Little Simon Pond from its southern shore. The intake is located approximately 20 feet below the water surface in 30 feet of water. The water from Little Simon Pond flows by gravity approximately two miles to the Little Simon Pond diatomaceous earth filtration plant located on Lake Simon Road. There were no restrictions placed on our water sources during 2018.

In accordance with State mandates, the Village water system provides treatment for filtration and disinfection for the Little Simon Pond source and disinfection for the groundwater sources.

The NYS Dept. of Health completed a source water assessment for this system based on available information. Little Simon Pond does not have an elevated susceptibility to contamination. There are no regulated facilities within this watershed and the corresponding land cover does not pose any substantial risks to the source water quality. This assessment for the Tupper Lake source found no noteworthy risks to source water quality. The health department will use this information to direct future source water protection activities. These may include water quality monitoring, resource management, planning, and education programs. A copy of the assessment, including a map of the assessment area, can be obtained by contacting us as noted below.

FACTS AND FIGURES

The Village of Tupper Lake supplies water to a population of 5,000 through 3,919 accounts (total of Village and Town accounts). Last year, we produced a total of 216-million gallons of water with an average daily demand of 616,666 gallons per day. The highest single day of water use was 969,537 gallons. Approximately 2,650,000 gallons were lost from the system during 2019 due to hydrant flushing, leaks, etc. Last year water customers were charged $4.54 per 1000 gallons and the annual average water charge per user was $230.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the State regulations require, we routinely test your drinking water for numerous contaminants. These contaminants include: total coliform, turbidity, inorganic compounds, nitrate, nitrite, lead and copper, volatile organic compounds, total trihalomethanes, and synthetic organic compounds. The table presented below depicts which compounds were detected in your drinking water. The State allows us to test for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old. It should be noted that all 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 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) or the New York State Department of Health at (518) 891-1800.

Table of Detected Contaminants
Wells and Little Simond Pond (LSP)

Contaminant	Violation Yes/No	Date of Sample	Level Detected	Unit Measurement	MCLG	Regulatory Limit	Likely Source of Contamination
Microbiological Contaminants							
Turbidity[1] (LSP)	No	10/8/19	0.71	NTU	n/a	<5 NTU (TT)	Soil Runoff
Turbidity[1] (LSP)	No	2019	100% <1.0	NTU	n/a	95% of samples < 1.0 NTU (TT)	Soil Runoff
Inorganic Contaminants							
Asbestos	No	2012	0.188	MFL	7	7	Decay of asbestos cement water mains; Erosion of natural deposits.
Barium (Wells) Barium (LSP)	No No	2019 2019	0.001 0.007	mg/L	2	2 (MCL)	Erosion of natural deposits.
Cyanide (LSP)	No	2019	0.014	mg/L	0.2	0.2	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories.
Sodium (Wells) Sodium (LSP)	No No	2019 2019	3.5 4.1	mg/L	n/a	See Note 6	Naturally occurring; Road salt; Water softeners; Animal waste.
Chloride (Wells) Chloride (LSP)	No No	2019 2019	1.8 3.4	mg/L	n/a	250 (MCL)	Naturally occurring or indicative of road salt contamination
Sulfate (Wells) Sulfate (SP)	No No	2019 2019	3.7 2.4	mg/L	n/a	250 (MCL)	Naturally occurring
Iron (Wells)	No	2019	0.14	mg/L	n/a	0.3 (MCL)	Naturally occurring
Manganese (Wells)	No	2019	0.033	mg/L	n/a	0.3 (MCL)	Naturally occurring or indicative of landfill leachate
Odor (Wells) Odor (LSP)	No No	2019 2019	2 1	Units	n/a	3 (MCL)	Natural sources; Organic or inorganic pollutants originating from municipal and industrial waste discharges.
Copper	No	2019	0.75[2] 0.06-1.0[3]	mg/L	1.3	1.3 (AL)	Corrosion of household plumbing systems.
Lead	No	2019	0.0052[2] ND-0.014[3]	mg/L	0	0.015 (AL)	Corrosion of household plumbing systems.
Nitrate (wells) Nitrate (LSP)	No No	2019 2019	ND ND	mg/L	10	10 (MCL)	Runoff from fertilizer use; leaching from septic tanks, sewage, erosion of natural deposits.
Disinfection Byproducts							
Total Trihalomethanes (TTHMs) Rt 30 Boat Launch	Yes	2019	132[4] 72 – 182[5]	ug/L	n/a	80(MCL)	By-products of drinking water chlorination needed to kill harmful organisms. TTHMs are formed when source water contains measurable amounts of organic matter.
Haloacetic Acids (HAA5) Rt 30 Boat Launch	Yes	2019	102[4] 1.6 – 182[5]	ug/L	n/a	60(MCL)	By-products of drinking water chlorination needed to kill harmful organisms.
Total Trihalomethanes (TTHMs) Village Office	Yes	2019	84[4] 37 – 122[5]	ug/L	n/a	80(MCL)	By-products of drinking water chlorination needed to kill harmful organisms. TTHMs are formed when source water contains measurable amounts of organic matter.
Haloacetic Acids (HAA5) Village Office	Yes	2019	96[4] 38-142[5]	ug/L	n/a	60(MCL)	By-products of drinking water chlorination needed to kill harmful organisms.
Radioactive Contaminants							
Gross Alpha	No	2018	0	pCi/L	0	15(MCL)	Erosion of natural deposits
Radium 226	No	2018	0	pCi/L	0	5(MCL)	Erosion of natural deposits
Radium 228	No	2018	0	pCi/L	0	5(MCL)	Erosion of natural deposits

Notes:

[1] Turbidity is a measure of the clarity of the water. We test it because it is a good indicator of the effectiveness of our filtration system. Last year, our highest single turbidity measurement for the year occurred on 09/08/2019 and the level was 0.71 NTU. State regulations require that turbidity must not exceed 5 NTU for diatomaceous earth filter plants and that 95% of the turbidity samples collected must measure below 1.0 NTU.

[2] The level presented represents the 90th percentile of the 40 sites tested. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. The 90th percentile is equal to or greater than 90% of the lead and copper values detected at your water system. In this case, 40 samples were collected at your water system and the 90th percentile value was the fourth highest value. The action levels for lead and copper were not exceeded at any of the sampling locations during 2019.

[3] The level presented represents the range of the 40 samples.

[4] The value represents the highest Locational Running Annual Average of the quarterly samples collected at the specified sampling location.

[5] The values represent the range of the quarterly samples collected at the specified sampling location.

[6] Water containing more than 20 mg/l of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 mg/l of sodium should not be used for drinking by people on moderately restricted sodium diets.

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.

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 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.

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 contamination.

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 required process intended to reduce the level of a contaminant in drinking water.

Non-Detects (ND): Laboratory analysis indicates that the constituent is not present.

Nephelometric Turbidity Unit (NTU): A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Milligrams per liter (mg/l): Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).

Micrograms per liter (ug/l): Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb).

Picocuries per liter (pCi/L): A measure of the radioactivity in water.

Million Fibers per Liter (MFL): million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

What does this information mean?

The Village of Tupper Lake received violations for exceeding the MCLs for Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5) during all four quarters in 2019. Disinfection byproduct concentrations have been decreasing since the wells were put online in June 2018 in the northern section of the water system, but have remained high in the southern sections of the water system. Compliance is based on a locational running annual average (LRAA). In other words, the sample result for the most recent calendar quarter is averaged with the three prior quarterly sample results for each sampling location. The LRAA is compared with the maximum contaminant level (MCL) allowed per regulations. A violation exists if the LRAA exceeds the MCL. The MCL for TTHM is 80 mcg/l (micrograms per liter). The MCL for HAA5 is 60 ug/l (micrograms per liter).

Total Trihalomethanes are a group of chemicals that are formed in drinking water during disinfection when chlorine reacts with naturally occurring organic material (e.g., decomposing vegetation such as tree leaves, algae or other aquatic plants) in surface water sources such as rivers and lakes. They are disinfection byproducts and include the individual chemicals chloroform, bromoform, bromodichloromethane, and chlorodibromomethane. The amount of trihalomethanes formed in drinking water during disinfection can change from day to day, depending on the temperature, the amount of organic material in the water, the amount of chlorine added, and a variety of other factors.

Disinfection of drinking water by chlorination is beneficial to public health. Drinking water is disinfected by public water suppliers to kill bacteria and viruses that could cause serious illnesses, and chlorine is the most commonly used disinfectant in New York State. All public water systems that use chlorine as a disinfectant contain trihalomethanes to some degree.

Some studies suggest that people who drank water containing trihalomethanes for long periods of time (e.g., 20 to 30 years) have an increased risk of certain health effects. These include an increased risk for cancer and for low birth weights, miscarriages and birth defects. The methods used by these studies could not rule out the role of other factors that could have resulted in the observed increased risks. In addition, other similar studies do not show an increased risk for these health effects. Therefore, the evidence from these studies is not strong enough to conclude that trihalomethanes were a major factor contributing to the observed increased risks for these health effects. Studies of laboratory animals show that some trihalomethanes can cause cancer and adverse reproductive and developmental effects, but at exposures much higher than exposures that could result through normal use of the water. The United States Environmental Protection Agency reviewed the information from the human and animal studies and concluded that while there is no causal link between disinfection byproducts (including trihalomethanes) and human health effects, the balance of the information warranted stronger regulations that limit the amount of trihalomethanes in drinking water, while still allowing for adequate disinfection. The risks for adverse health effects from trihalomethanes in drinking water are small compared to the risks for illness from drinking inadequately disinfected water.

Haloacetic Acids are formed in drinking water during treatment by chlorine (the most commonly used disinfectant in New York State), which reacts with certain acids that are in naturally-occurring organic material (e.g., decomposing vegetation such as tree leaves, algae, or other aquatic plants) in surface water sources such as rivers and lakes. The amount of HAAs in drinking water can change from day to day, depending on the temperature, the amount of organic material in the water, the amount of chlorine added, and a variety of other factors. Drinking water is disinfected by public water suppliers to kill bacteria and viruses that could cause serious illnesses. For this reason, disinfection of drinking water by chlorination is beneficial to public health.

Some studies suggest that people who drank chlorinated drinking water containing disinfection by-products (possibly including HAAs) for long periods of time (e.g., 20 to 30 years) have an increased risk for certain health effects. These include an increased risk for cancer. However, how long and how frequently people actually drank the water as well as how much HAAs the water contained is not known for certain. Therefore, the evidence from these studies is not strong enough to conclude that the observed increased risk for cancer is due to

HAAs, other disinfection by-products, or some other factor. Studies of laboratory animals show that the individual HAAs, dichloroacetic acid and trichloroacetic acid, can cause cancer following exposure to high levels over their lifetimes. Dichloroacetic acid and trichloroacetic acid are also known to cause other effects in laboratory animals after high levels of exposure, primarily on the liver, kidney, and nervous system and on their ability to bear healthy offspring. The effects reported in studies of laboratory animals occur at exposures much higher than exposures that could result through normal use of the water. The risks for adverse health effects from HAAs in drinking water are small compared to the risk for illness from drinking inadequately disinfected water.

Lead 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 Tupper Lake 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 or at http://www.epa.gov/safewater/lead.

We have learned through our other testing that some contaminants (including asbestos and barium) have also been detected; however, these contaminants were detected below the level allowed by the State.

Is our water system meeting other rules that govern operations?
Last year, our system was in compliance with all other applicable State drinking water operating, monitoring and reporting requirements.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?
Some people may be more vulnerable to disease causing microorganisms or pathogens 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 from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

WHY SAVE WATER AND HOW TO AVOID WASTING IT?
Although our system has an adequate amount of water to meet present and future demands, there are a number of reasons why it is important to conserve water:

- Saving water saves energy and some of the costs associated with both of these necessities of life;
- Saving water reduces the cost of energy required to pump water and the need to construct costly new wells, pumping systems and water towers; and
- Saving water lessens the strain on the water system during a dry spell or drought, helping to avoid severe water use restrictions so that essential firefighting needs are met.

You can play a role in conserving water by becoming conscious of the amount of water your household is using, and by looking for ways to use less whenever you can. It is not hard to conserve water. Conservation tips include:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it up and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank, watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from one of these otherwise invisible toilet leaks. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances, then check the meter after 15 minutes, if it moved, you have a leak.

Closing

Thank you for allowing us to continue to provide your family with quality drinking water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all of our customers. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements. Please call our office if you have questions. Copies of all of our test results are also available at our office.