Introduction

To comply with New York State regulations, the Village of Nunda, 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, your tap water met all New York State drinking water health standards. We are proud to report that our system did not violate a maximum contaminant level or any other water quality standard. 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 Troy Bennett, Chief Water Operator, at 585-468-5983. 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 the second Tuesday of each month at 6:30 PM at the Nunda Government Center.

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, in some cases, radioactive material, 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 number 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 system serves 1600 people through 758 service connections. The total water produced in 2018 was 44,703,000 gallons. The daily average of water treated and pumped into the distribution system was 122,000 gallons per day. Our highest single day was 226,000 gallons in November 2018. The amount of water delivered to customers was 29,310,221 gallons. This leaves a total of 15,392,779 gallons which was used to provide bulk water to customers, the Town Highway & Village Streets Departments, Village Water Treatment Plant and Waste Water Treatment Plant for backwashing requirements, flushing mains, fighting fires, and leakage, and accounts for the remaining 34.43% of the total amount produced. In 2018, water customers were charged $48.30 for the minimum usage of 5,000 gallons per quarter, and $3.30 per 1,000 gallons of water over the minimum usage. The annual *average water* charge per user, less the debt service charge was $268.84, billed quarterly with an average of $67.21.

Our water source is a man-made impoundment reservoir on Chidsey Road, in the Town of Nunda, holding an estimated 13,000,000 gallons of water and was completed in the early 1960's. During 2018, our system did not experience any restriction of our water source. Prior to distribution, the raw water enters two clarification tanks. Stern-Pac (a coagulant) is added to optimize settling. The gravity-fed multimedia filters then remove the finer organic and inorganic matter and an optimum turbidity (clarity of water) is the result. The last stage of treatment is disinfection with chlorine. Chlorine is an oxidizing agent and is the most widely-used means of disinfection prior to distribution. Ortho-phosphates are also added for corrosion control in the distribution system.

The New York State Department of Health has evaluated the Village of Nunda's water source susceptibility to contamination under the Source Water Assessment Program (SWAP), and their findings are summarized in the paragraphs below. It is important to stress that these assessments were created using available information and only estimate the potential for source water contamination. Elevated susceptibility ratings do not mean that source water contamination has or will occur for this Public Water Supply (PWS). This PWS provides treatment and regular monitoring to ensure the water delivered to consumers meets all applicable standards.

For the reservoir on Chidsey Road, this assessment found an elevated susceptibility to contamination for this source of drinking water. The amount of agricultural lands in the assessment area results in elevated potential for protozoa and pesticides contamination. No permitted discharges are found in the assessment area. There is also considerable contamination susceptibility associated with other discrete contaminant sources, and these facility types include mines. Finally, it should be noted that hydrologic characteristics (e.g. basin shape and flushing rates) generally make reservoirs highly sensitive to existing and new sources of phosphorus and microbial contamination.

Are there contaminants in our drinking water?

As New York State regulations require, we routinely test your drinking water for numerous contaminants. These contaminants include: total coliform, turbidity, inorganic compounds, nitrate, lead and copper, volatile organic compounds, total trihalomethanes, halo acetic acids, radiological contaminants, Escherichia Coli, and synthetic organic compounds. The complete list of monitoring results will be available at the Village of Nunda Clerk's Office for public viewing during normal business hours. The table presented below depicts which compounds were detected in your drinking water. New York State does allow our municipality 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, is 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 Environmental Protection Agencies Safe Drinking Water Hotline (800-426-4791) or the Livingston County Health Department at 585-243-7280.

Table of Detected Contaminants

Contaminant	Violation Yes/No	Date of Sample	Level Detected Average/Maximum Range	Unit Measure-ment	MCLG	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination
Chlorine Residuals Measured in Distribution							
Chlorine Residual	**No**	Daily	Range (0.36-1.01)	mg/l	N/A	MRDL=4.0	Water additive used to control microbes
Microbiological Contaminants							
Turbidity *(1)* (Raw)	No	Daily	**1.98958 / 46.905** Average / Maximum	NTU	N/A	N/A	Soil Runoff
Turbidity *(1)* (Treatment)	No	Daily	**.00500 / .1950**	NTU	N/A	TT = 0.3	Soil Runoff
Turbidity (1) (Distribution)	No	5 per week	**0.15 / 0.185** Average / Maximum	NTU	N/A	NTU = 5	Soil Runoff
Disinfection Byproducts							
Total Trihalomethanes (Chloroform, Bromodichlorimethane, Dibromochloromethane, Bromoform)	No	8/07/2018	**43**	ug/L	N/A	MCL = 80	By-product of drinking water chlorination needed to kill harmful organisms. Trihalonmethanes are formed when source water contains large amounts of organic matter.
Haloacetic Acids	No	8/07/2018	**21**	ug/L	N/A	MCL = 60	By-product of drinking water chlorination.
Disinfection byproduct Precursors							
TOC - Total Organic Carbon Raw Water	No	Monthly	**1.97** Average / Range 1.2 / 2.9	mg/L	N/A	N/A	Disinfection By-product Precursor
TOC - Finished Water	No	Monthly	**<1** Average / Range ND / 1.8	mg/L	N/A	TT 15 - 25% removal	Disinfection By-product Precursor
Inorganic Contaminants							
Barium	No	12/12/18	**33.0**	mg/l	2	MCL = 2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Chloride	No	10/17/2017	**34**	mg/L	N/A	MCL = 250	Naturally occurring or indicative of road salt contamination. **Samples were taken January 2019; results will be reported in the 2019 Annual Water Quality Report**.
Sodium	No	10/17/2017	**19**	mg/L	AL	AL = 20	Naturally occurring; Road salt; Water softeners; Animal waste. **Samples were taken January 2019; results will be reported in the 2019 Annual Water Quality Report.**
Chloroform(2) Bromodichloromethane(2) Dibromochloromethane(2)	No	12/12/18	**8.2** **4.2** **1.3**	ug/l	N/A	MCL = 80	Byproduct of drinking water chlorination.

Lead and Copper							
Copper	No	9/12/17	***0.098*[(3)]** Range 0.0010-0.100	mg/L	0	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits. Next sample year 2020
Lead	No	9/12/17	**0.0014[(3)] <0.0010-0.0014**	ug/l mg/L	AL	AL = 15	Corrosion of household plumbing systems; Erosion of natural deposits. **Next sample year 2020**
Long Term 2 Enhanced Surface Water Treatment Rule (4)							
Escherichia Coli (E. coli)	No	10/2017-10/2018 Every two weeks	Average 23.92	cfu/100ml.	0	Yearly average over 100	Naturally present in the environment.

(1) Turbidity is a measure of the cloudiness of the water. We test it because it is a good indicator of the effectiveness of our filtration system. Our highest single treated turbidity measurement of 0.185 NTU for the year occurred on August 26, 2018, State regulations require that turbidity, prior to distribution, must always be below 1 NTU. The regulations require that 95% of the turbidity samples collected have measurements below 0.3 NTU. Turbidity samples are collected 5 days per week at various locations in the distribution system. Regulations require that distribution turbidity readings do not exceed 5 NTU.
(2) The total of chloroform, bromodichloromethane, dibromochloromethane and bromoform must not exceed 80 ug/L.
(3) The level presented represents the 90th percentile of the 10 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. The action level for lead and copper was not exceeded at any of the sites tested.

(4) ADDITIONAL SAMPLING CONDUCTED

E. coli is bacteria present in varying concentrations in many surface waters and is removed/inactivated through a combination of filtration and disinfection. From October, 2017 – October 2018, samples were required to be collected every two weeks as part of a special sampling plan. Samples are collected from pretreated (raw) water from the system's water source. The samples were part of the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR), whose purpose is to improve control of cryptosporidium in source water. These samples represent *E. coli* levels in the **raw** water and **not** water that has been filtered and treated at our water treatment plant.

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.
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).
Halo acetic acids (five) (HAA5) means the sum of the concentrations in milligrams per liter of five specific haloacetic acid compounds.
Total Trihalomethane (TTHM) means the sum of the concentration of trichloromethane (chloroform), dibromochloromethane, bromodichloromethane and tribromomethane (bromoform).
Colony forming unit(cfu): Measurement of a colony of cells

What Does This Information Mean?

Although no action level for lead was exceeded, we are required to present the following information on lead in drinking water:

If present, elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and young children. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used your home's plumbing. The Village of Nunda 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 (1-800-426-4791) or at http://www.epa.gov/safewater/lead.

Monitoring Violations:

A Notice of Violation was reported to the Village of Nunda by the Livingston County Department of Health. This violation notified the governing board of the municipality of the failure to provide the annual samples for *nitrate, chloride* and *sodium* for 2018. The Livingston County Department of Health requires that sodium and chloride be monitored annually at the same location, based on elevated levels measured in the water supply in previous years (Subpart 5-1.52 Table 8D). Samples must be analyzed by an approved laboratory. It was reported that the required samples were not collected in the required time frame. The missed samples constitute violations of Part 5. A compliance meeting was conducted and the *nitrate, chloride* and *sodium* samples were collected and analyzed in January 2019.

Do I Need to Take Special Precautions?

Although our drinking water met or exceeded state and federal regulations, 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).

Spanish

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien. This report contains very important information about your drinking water. Translate it or speak with someone who understands it.

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 treat 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 fire fighting 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 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.

System Improvements and 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.

Through collaboration with New York State Rural Water Association, the Village of Nunda reduced loss of water by 10.95% from 2017 to 2018 by identifying leaks within the infrastructure and repairing our system. Continued efforts are still underway to continue monitoring leakage through system checks.

The Nunda Water Department was successful in installing fifty-nine (59) new water meter heads throughout the Village this year. The new water meter heads provide a more accurate water use total by the single gallon consumed. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements. We ask that all our customers help us protect our water sources, which are the heart of the community. Please call our office at 585-468-2215 if you have questions.