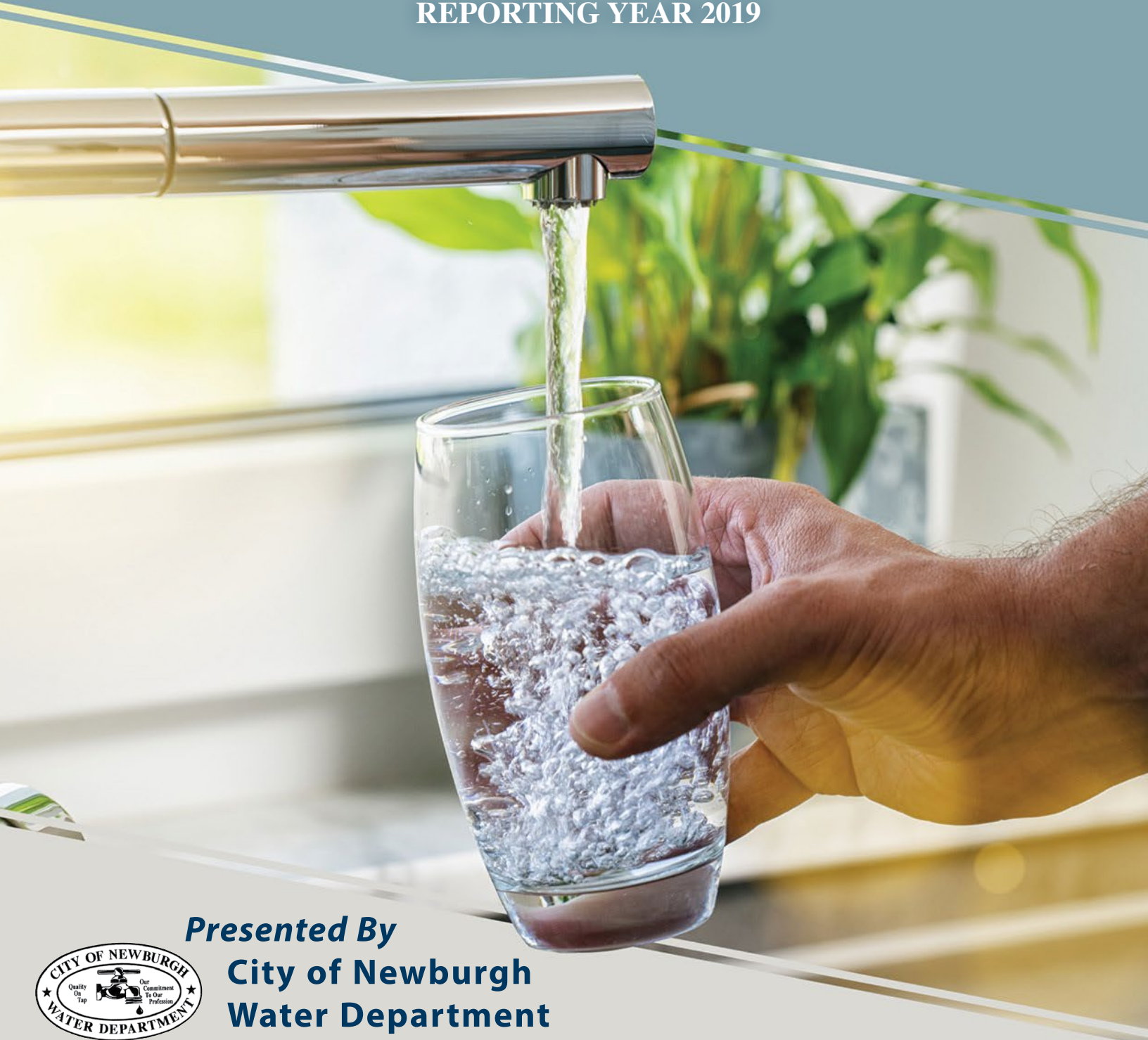


ANNUAL WATER QUALITY REPORT

REPORTING YEAR 2019



Presented By
**City of Newburgh
Water Department**



Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1, 2019 and December 31, 2019. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education, while continuing to serve the needs of all our water users.

Please remember that we are always available should you ever have any questions or concerns about your water.



Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. We meet the second and fourth Mondays of each month, except in July and August when there is only one meeting. Meetings take place at 7 p.m. in the Council Chambers at City Hall, 83 Broadway, Newburgh, NY. For more information concerning City Council meetings, contact the Executive Office at (845) 569-7301. There is always an open forum to express your opinions and ideas. Look us up on the Internet at www.cityofnewburgh-ny.gov.

How Is My Water Treated and Purified?

After the water is withdrawn from the reservoir or aqueduct, this water undergoes several chemical and physical processes to ensure that potential contaminants are removed and the water is clean and safe for your needs prior to distribution. The City's water filtration plant has the ability to treat approximately 8.85 million gallons of water per day, more than two times our average daily consumption. The plant also employs a series of mechanical and chemical treatments to remove color, odor, and tastes, along with organic material, dirt, and particles. The water then passes through a series of sand filters and our new granular activated carbon system. Chlorine is then added for disinfection, fluoride is added to help promote sound dental health, and corrosion inhibitors are added to reduce the corrosive effects of water on pipes and plumbing. The water is then pumped to our new baffled above-ground contact tank and our above-ground storage tanks and into your home or business.

Important Health Information

Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

Some people may be more vulnerable to disease causing microorganisms or pathogens in drinking water than the general population. Immunocompromised 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 at (800) 426-4791.

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 in your home's plumbing. We 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 (800) 426-4791 or at www.epa.gov/safewater/lead.



QUESTIONS?

For more information about this report, or for any questions related to your drinking water, please call Mr. Wayne Vradenburgh, Superintendent of Water, at (845) 565-3356. You may also contact the Orange County Department of Health at (845) 291-2331.

Substances That Could Be in Water

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.

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 poses a health risk. In order to ensure that tap water is safe to drink, the State and the US EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the US FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

Water Conservation Tips

You can play a role in conserving water and saving yourself money in the process 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. Here are few tips:

- 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 an invisible toilet leak. Fix it and you can 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.

Where Does My Water Come From?

The City of Newburgh's Drinking Water Filtration Plant is able to utilize three different surface water sources to produce clean drinking water. These surface water sources consist of Washington Lake, Brown's Pond (Silver Stream Reservoir), and the New York City Catskill Aqueduct. Previous to May 2016, the City primarily obtained source water from Washington Lake. Due to the presence of perfluorinated chemicals (PFAS) found within Washington Lake, and in response to more stringent contaminant level goals imposed by the United State Environmental Protection Agency and the New York State Department of Health, the City discontinued the use of Washington Lake after May of 2016. Since that time, the City has relied on its backup supplies of source water; Brown's Pond (Silver Stream Reservoir) and the NYCDEP Catskill Aqueduct. The City is actively working with various local, state, and federal agencies and environmental organizations to identify the sources of contamination affecting Washington Lake and to develop strategies for both remediation and future protections.

Until such time that Washington Lake and its watershed is fully remediated and adequately protected, the City of Newburgh's Water Department utilizes the NYCDEP Catskill Aqueduct as its primary supply of source water, and utilizes Brown's Pond (Silver Stream Reservoir) as a backup supply when the Catskill Aqueduct is unavailable. The Catskill Aqueduct was shut down several times in the 2019 calendar year for planned maintenance. Below is a timeline that describes the sources of water that the City of Newburgh used during the 2019 calendar year.

The City of Newburgh's Source Water time line for 2019 is as follows:

1. January 1, 2019–June 18, 2019 Brown's Pond (Silver Stream Reservoir)
2. June 19, 2019–November 7, 2019 NYCDEP Catskill Aqueduct
3. November 8, 2019–December 31, 2019 Brown's Pond (Silver Stream Reservoir)



Source Water Assessment

The NYS DOH has evaluated our susceptibility to contamination under the Source Water Assessment Program (SWAP), and their findings are summarized in the paragraph below. These assessments were created using available information; they estimate only the potential for source water contamination. Elevated susceptibility ratings do not mean that source water contamination has or will occur. We provide treatment and regular monitoring to ensure that the water delivered to customers meets all applicable standards.

The analysis of available information for this source water assessment did not find any significant sources of contamination in the watershed. Statewide and local databases of permitted facilities were used to identify discrete potential sources of contamination. No discrete sources were identified within the assessment area. Land use within the watershed was evaluated by contaminant category to rate the likely prevalence of contamination associated with the land use.

The contaminant category rating for land use types were determined to be medium for microbial contamination due to agricultural practices in the watershed. The overall susceptibility of this watershed to potential sources of contamination was found to be medium for microbial contamination. A copy of the assessment, including a map of the area, can be obtained by contacting us, as noted in the report.

Count on Us

Delivering high-quality drinking water to our customers involves far more than just pushing water through pipes. Water treatment is a complex, time-consuming process. Because tap water is highly regulated by state and federal laws, water treatment plant and system operators must be licensed and are required to commit to long-term, on-the-job training before becoming fully qualified. Our licensed water professionals have a basic understanding of a wide range of subjects, including mathematics, biology, chemistry, and physics. Some of the tasks they complete on a regular basis include:

- Operating and maintaining equipment to purify and clarify water;
- Monitoring and inspecting machinery, meters, gauges, and operating conditions;
- Conducting tests and inspections on water and evaluating the results;
- Maintaining optimal water chemistry;
- Applying data to formulas that determine treatment requirements, flow levels, and concentration levels;
- Documenting and reporting test results and system operations to regulatory agencies; and
- Serving our community through customer support, education, and outreach.

So, the next time you turn on your faucet, think of the skilled professionals who stand behind each drop.

What's a Cross-Connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (back-pressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (back-siphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed industrial, commercial, and institutional facilities in the service area to make sure that potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test backflow preventers to make sure that they provide maximum protection.

For more information on backflow prevention, contact the Safe Drinking Water Hotline at (800) 426-4791.



Tap versus Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent according to government estimates).

The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Further, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to \$1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, check out their website at <https://goo.gl/Jxb6xG>.

Facility Modification/System Improvements

In May 2019, The City of Newburgh Water Department received a notice of Violation from the Orange County Department of Health, Violation # 2019 1242 City of Newburgh, due to Operation and Maintenance of a Public Water System, for failure to replace sand and anthracite in Filter #6, as identified as being out of specification during an April 2015 Filter Self Assessment.

In 2019, the City of Newburgh applied and was granted a \$5 million grant through NYS EFC to upgrade our conventional filtration system. That work is underway.

Facts and Figures

Our water system serves approximately 29,000 people through 5,675 service connections. We have more than 73 miles of water mains, ranging from 4 inches in diameter to 30 inches in diameter. More than 800 fire hydrants and approximately 3,500 gate valves are used to turn off water mains in cases of water main breaks or other emergency situations. The total water produced in 2019 was approximately 1.1 billion gallons. The daily average of water treated and distributed was 2.9 million gallons, and the highest single day was 4.3 million gallons. The amount of water delivered to customers was approximately 686 million gallons. The difference

between the water produced and the water delivered can be attributed to several factors, including, but not limited to, main flushing, firefighting, leaks, unauthorized use, and other non-metered uses.

For the last nineteen (19) years, the City's Water Department has conducted a citywide leak detection survey. The leak survey is conducted on a yearly basis and, by repairing the leaks found, it prevents wasted water from leaks and helps continue our efforts to keep costs down for our customers.

The City of Newburgh water rate for a 5/8 meter is \$6.44 per thousand gallons with a 6,000 gallon minimum quarterly. Water bills are mailed out quarterly, and unpaid balances are subject to a 10% penalty after 30 days.

“We remain vigilant in delivering the best-quality drinking water”

Fluoridation of Our Water

Our system is one of the many drinking water systems in New York State that provides drinking water with a controlled, low level of fluoride for consumer dental health protection. According to the United States Centers for Disease Control, fluoride is very effective in preventing cavities when present in drinking water at an optimal range from 0.8 to 1.2 ppm. To ensure that the fluoride supplement

in your water provides optimal dental protection, the State Department of Health requires that we monitor fluoride levels on a daily basis. During the reporting year, monitoring showed fluoride levels in your water were in the optimal range 100 percent of the time. None of the monitoring results showed fluoride at levels that approached the 2.2 ppm MCL for fluoride.



Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule. And, the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The State recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

We participated in the 4th stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR4) program by performing additional tests on our drinking water. UCMR4 sampling benefits the environment and public health by providing the U.S. EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if U.S. EPA needs to introduce new regulatory standards to improve drinking water quality. Unregulated contaminant monitoring data are available to the public, so please feel free to contact us if you are interested in obtaining that information. If you would like more information on the U.S. EPA's Unregulated Contaminants Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	DATE SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	06/20/2019	2	2	0.0034	NA	No	Erosion of natural deposits
Benzene (ppb)	NA	NA	NA	NA	NA	No	NA
Fluoride (ppm)	February 2019	2.2	NA	1.38	0–1.38	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [mono-, di-, and trichloroacetic acid, and mono- and dibromoacetic acid]–Stage 1 (ppb)	quarterly	60	NA	0.9	0–1.25	No	By-product of drinking water disinfection needed to kill harmful organisms
Nitrate (ppm)	03/06/2019	10	10	0.321	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium ¹ (ppm)	December 5, 2019	*see footnote	NA	30.4	NA	No	Naturally occurring; Road salt; Water softeners; Animal waste
Total Coliform Bacteria (positive samples)	January 2019 to December 2019	TT = 2 or more positive samples	0	0	NA	No	Naturally present in the environment
Total Organic Carbon [TOC] ² (ppm)	January 2019 to December 2019	TT	NA	1.95	1.46–1.95	No	Naturally present in the environment
Total Trihalomethanes [TTHMs – chloroform, bromodichloromethane, dibromochloromethane, and bromoform]–Stage 2 (ppb)	quarterly	80	NA	4.4	>1.25–5.1	No	By-product of drinking water chlorination needed to kill harmful organisms. TTHMs are formed when source water contains large amounts of organic matter
Turbidity [Distribution System] ³ (NTU)	January 2019 to December 2019	TT	NA	0.23	0.13–0.23	No	Soil runoff
Turbidity ⁴ (NTU)	January 2019 to December 2019	TT	NA	0.30	0.03–0.30	No	Soil runoff
Turbidity (lowest monthly percent of samples meeting limit)	January 2019 to December 2019	TT = 95% of samples meet the limit	NA	95%	NA	No	Soil runoff

Tap Water Samples Collected for Copper and Lead Analyses from Sample Sites throughout the Community

SUBSTANCE (UNIT OF MEASURE)	DATE SAMPLED	AMOUNT DETECTED (90TH %ILE)				RANGE LOW-HIGH	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
		AL	MCLG						
Copper (ppm)	2-19-19	1.3	1.3	0.412	0.022-0.735	0/60	No	Corrosion home plumbing systems	
	8-14-19			0.139					ND to 1.95
Lead (ppb)	2-19-19	15	0	11.3	ND to 297	5/60	No	Corrosion home plumbing systems	
	8-14-19			9.5					ND to 1370

UNREGULATED SUBSTANCES

SUBSTANCES	MRL	RAW WATER	FINISHED WATER	DISTRIBUTION SYSTEM
Raw Source: Brown's Pond: Sample Dates: 1/2/2019, 1/10/2019, 1/17/19, 3/14/19, 4/19/19, 5/3/19, 12,4,2019				
Perfluorobutanesulfonic Acid (PFBS)	2 ppt	<2 ppt	<2 ppt	NA
Perfluorohexanesulfonic Acid (PFHxS)	2 ppt	<2 ppt	<2 ppt	NA
Perfluoroheptanoic Acid (PFHpA)	2 ppt	<2 ppt	<2 ppt	NA
Perfluorooctanoic Acid (PFOA)	2 ppt	<2 ppt	<2 ppt	NA
Perfluorooctanesulfonic Acid (PFOS)	2 ppt	<2 ppt	<2 ppt	NA
Perfluorononanoic Acid (PFNA)	2 ppt	<2 ppt	<2 ppt	NA

¹Water containing more than 20 ppm of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 ppm of sodium should not be used for drinking by people on moderately restricted sodium diets.

²The value reported under Amount Detected for TOC is the lowest ratio between the percentage of TOC actually removed to the percentage of TOC required to be removed. A value of greater than one indicates that the water system is in compliance with TOC removal requirements. A value of less than one indicates a violation of the TOC removal requirements.

³Turbidity is a measure of the cloudiness of the water. It is tested because it is a good indicator of the effectiveness of the filtration system. The highest measurement of the monthly average distribution results for the year occurred as indicated in the table above.

⁴Turbidity is a measure of the cloudiness of the water. It is tested because it is a good indicator of the effectiveness of the filtration system. Our highest single turbidity measurement for the year occurred as indicated in the table above. State regulations require that turbidity must always be below 1 NTU. The regulations require that 95% of the turbidity samples collected have measurements below 0.3 NTU. (Note that TT is dependent upon filtration method: conventional, 0.3 NTU; slow sand, 1.0 NTU; or diatomaceous earth filtration, 1.0 NTU.) Although the month as indicated in the Date column above was the month when we had the fewest measurements meeting the treatment technique for turbidity, the levels recorded were within the acceptable range allowed and did not constitute a treatment technique violation.

Non-detected Substances

The following is a list of regulated potential drinking water contaminants that the City of Newburgh tested for but did not detect.

Alachlor, Atrazine, gamma-BHC (Lindane), Butachlor, Chlordane, Dieldrin, Endrin, Picloram, 2,4,5-TP (Silvex), Aidicarb, Aidicarb sulfone, Aidicarb sulfoxide, Carbofuran, 3-Hydroxycarbofuran, Methomyl, Oxamyl, 4-Chlorotoluene, Dibromomethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Dichlorodifluoromethane, 1,1-Dichloroethane, 1,2-Dichloroethane, Toluene, 1,2,3-Trichlorobenzene, Trichlorofluoromethane, 1,2,3-Trichloropropane, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Arsenic, Chromium, Zinc, Heptachlor, Heptachlor epoxide, Hexachlorobenzene, Methoxychlor, Metolachlor, PCB, Total, Propachlor, Carbaryl, Aldrin, Benzo(a)pyrene, bis(2-Ethylexyl)adipate, bis(2-Ethylexyl)phthalate, Metribuzin, Benzene, Bromobenzene, Bromochloromethane, cis-1,2-Dichloroethane, trans-1,2-Dichloroethane, 1,2-Dichloropropane, 1,3-Dichloropropane, 2,2-Dichloropropane, 1,1-Dichloropropane, cis-1,3-Dichloropropane, trans-1,3-Dichloropropane, Tetrachloroethane, 1,2,4-Trichlorobenzene, Trichloroethane, m-Xylene and p-Xylene, o-Xylene, Methyl-tert-butyl ether, Beryllium, Antimony, Selenium, Simazine, Toxaphene, 2,4-D, Dalapon, Dicamba, Dinoseb, Pentachlorophenol, Bromomethane, n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloromethane, 2-Chlorotoluene, Ethylbenzene, Hexachlorobutadiene, Isopropylbenzene, p-Isopropyltoluene, Methylene Chloride, n-Propylbenzene, Styrene, 1,1,1,2-Tetrachloroethane, 1,1,2,2-Tetrachloroethane, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Vinyl Chloride, Iron, Silver, Cadmium, Thallium, Gross Alpha, Radium 226, Radium 228, Total Uranium, Nickel, Nitrate.

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of 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.

AL (Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as possible.

MCLG (Maximum Contaminant Level Goal): 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.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): 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.

NA: Not applicable.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter).

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.