

Annual Drinking Water Quality Report for 2022

City of Watervliet

City Hall, Watervliet, NY 12189

Public Water Supply Identification Number NY0110127

INTRODUCTION

To comply with State regulations, the City of Watervliet 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 4 of those contaminants at a level higher than the State allows. As we told you at that time our water temporarily exceeded a drinking water 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. Our constant goal is and always has been, to provide to you a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and to protect our water resources. If you have any questions concerning this report or concerning your drinking water please contact: *Mr. Dave Dressel, Water Systems Supervisor, 222 Watervliet Shaker Road, Telephone (518) 785-7082.* We want our valued customers to be informed about their water service. If you want to learn more, please attend any of our regularly scheduled City Council meetings. They are held the 2nd and 4th Tuesday each month, 7:00 PM at the *City Hall, Watervliet, NY 12189.*

WHERE DOES OUR WATER COME FROM?

The source of water for the City of Watervliet Water System is the Watervliet Reservoir, located in the Town of Guilderland. The reservoir has an impoundment area of 620 acres that captures water from a 112 square mile basin drained by the Norman's Kill, Bozen Kill and Black Creek. The reservoir has a capacity of 1.7 billion gallons of water.

Water from the reservoir flows to the Watervliet Water Treatment Plant. The treatment process consists of; pre-oxidation using sodium permanganate for iron and manganese removal, coagulation using poly aluminum chloride to cause small particles to stick together when the water is mixed, making larger heavier particles; sedimentation allows the newly formed larger particles to settle out naturally; filtration removes smaller particles by trapping them in sand filters; zinc ortho- phosphate for corrosion control ; and final post chlorination to protect against contamination from harmful bacteria and other organisms.

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 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.

FACTS AND FIGURES

The city provides water through approximately 2,600 residential services to a population of approximately 10,200 people. Our average daily demand is 2,280,000 gallons. Our single highest day was 3,208,000 gallons. The total water produced in 2022 was 832,000,000 gallons. Residential customers are billed at a flat rate of \$200.48 per 6 months. Commercial customers are metered and bill at a rate of \$4.42 per 1000 gallons of water with a minimum of \$220.60. We estimate the water loss from the system to be about 10%. The unaccounted water is due to such activities as firefighting, watermain flushing, water breaks and leaks and underreading meters.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

In accordance with State regulations, the City of Watervliet routinely monitors your drinking water for numerous contaminants. We test your drinking water for inorganic contaminants, radiological contaminants, lead and copper, nitrate, volatile organic contaminants, and synthetic organic contaminants. In addition, we test 12 samples for coliform bacteria each month. The table presented on page 3 depicts which contaminants were detected in your drinking water. 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. Some of the data, though representative of the water quality, is more than one year old. For a listing of the parameters, we analyzed that were not detected along with the frequency of testing for compliance with the NYS Sanitary Code, see Appendix A.

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 pose 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 Albany County Health Department at (518) 447-4620.

WHAT DOES THIS INFORMATION MEAN?

As you can see by the table on page 5, our systems had 4 violations in 2022. We exceeded the MCL for the *Trihalomethanes* during the 1st and 2nd quarters of 2022. We returned to compliance in the 3rd quarter of 2022. We are required to present the health effects language which explains the potential adverse health effects: We have increase our THM/HAA5 monitoring to monthly samples to keep better track of the Disinfection Byproduct and have installed a Mixer in the storage tanks to aerate and lower the TTHM concentrations formed in the distribution system. The City also has 4 Solarbees in the Watervliet Reservoir and 1 Gridbee in the service reservoir. These help with circulating the water to promote better quality.

Trihalomethanes

Some studies suggest that people who drink chlorinated water (which contains trihalomethanes) or water containing elevated levels of trihalomethanes for long periods of time may have an increased risk for certain health effects. For example, some studies of people who drank chlorinated drinking water for 20 to 30 years show that long term exposure to disinfection by-products (including trihalomethanes) is associated with an increased risk for certain types of cancer. A few studies of women who drank water containing trihalomethanes during pregnancy show an association between exposure to elevated levels of trihalomethanes and small increased risks for low birth weights, miscarriages and birth defects. However, in each of the studies, how long and how frequently people actually drank the water, as well as how much trihalomethanes the water contained is not known for certain. Therefore, we do not know for sure if the observed increases in risk for cancer and other health effects are due to trihalomethanes or some other factor. The individual trihalomethanes chloroform, bromodichloromethane and dibromochloromethane cause cancer in laboratory animals exposed to high levels over their lifetimes. Chloroform, bromodichloromethane and dibromochloromethane are also known to cause effects in laboratory animals after high levels of exposure, primarily on the liver, kidney, nervous system and on their ability to bear healthy offspring. Chemicals that cause adverse health effects in laboratory animals after high levels of exposure may pose a risk for adverse health effects in humans exposed to lower levels over long periods of time.

Additionally, we had a Treatment Technique violation for the Total Organic Carbon compliance ratio during the 1st and 2nd quarter of 2022. The compliance ratio should be 1.0 or greater which signifies the Total Organic Carbon removal from the treated water and are required to present the following Health Effects Language:

Total Organic Carbon

Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer. We returned to compliance in the 3rd quarter of 2022.

As you can see in the Table we were under the turbidity performance standard of 95% of the turbidities should be less than 0.3 NTU. We had only 94.6% of the turbidity measurements meeting the standard that month which is a Treatment Technique violation and must supply the following Health Effects Information:

Turbidity

*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. Please pay special attention to the additional statement in this document regarding *Cryptosporidium*.*

Odor

Odor as measured by this standard procedure has no health effects; although several contaminants exert odors when they are present at levels near their MCLs. Odor is an important quality factor affecting the drinkability of water. The sample was from the entry point and the fact that it was chlorinated may have influence the odor determination in the lab. We had not received any complaints with regard to odor at that time and may have been an isolated incident.

New York State has adopted the first in the nation drinking water standard for 1,4-Dioxane along with one of the lowest maximum contaminant levels for PFOA and PFOS. Public Water Supplies in NYS are required to test for PFOA and 1,4-Dioxane. PFOA and PFOS have Maximum Contaminant Levels (MCL) of 10 parts per trillion each

while 1,4-Dioxane has an MCL of 1.0 parts per billion. The City of Watervliet Water Department has completed its 3rd quarter monitoring with some minor detects of the polyfluoroalkyl compounds in 2022.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2022, our system was in compliance with applicable State drinking water operating, monitoring and reporting requirements.

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 microbiological pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

INFORMATION ON LEAD

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 City of Watervliet is responsible for providing high quality drinking water and removing lead pipes, but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water. If you are concerned about lead in your water and wish to have your water tested, contact David Dressel at Watervliet Water Department. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at <http://www.epa.gov/safewater/lead>

WHAT IS THE SOURCE WATER ASSESSMENT PROGRAM (SWAP)?

To emphasize the protection of surface and ground water sources used for public drinking water, Congress amended the Safe Drinking Water Act (SDWA) in 1996. The amendments require that New York State Department of Health's Bureau of Public Water Supply Protection is responsible for ensuring that source water assessments are completed for all of New York's public water systems. A SWAP summary for our water supply is attached to this report

WATER CONSERVATION TIPS

The City of Watervliet encourages water conservation. There are a lot of things you can do to conserve water in your own home. Conservation tips include:

- ◆ Only run the dishwasher and clothes washer when there is a full load
- ◆ Use water saving showerheads
- ◆ Install faucet aerators in the kitchen and the bathroom to reduce the flow from 4 to 2.5 gallons per minute
- ◆ Water gardens and lawn for only a couple of hours after sunset
- ◆ Check faucets, pipes and toilets for leaks and repair all leaks promptly

CAPITAL IMPROVEMENTS

The following projects were completed in 2022

- Installed a new Emergency Generator
- Installed a new boiler at the Treatment Plant
- Installed new security fence around the property at the Treatment Plant
- Replaced 700 feet of water main.
- Added a mixer to the clearwell

Projects planned for the following 2023 year are

- New SCADA System upgrades
- New Flocculators
- New flashboards at the dam
- Around 700ft of water main replacement

CLOSING

Thank you for allowing us to continue providing your family with clean, quality water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit our customers. We ask that all our customers help us protect our water sources, which are the heart of our community. Please call our office if you have questions.

**Watervliet Reservoir
Source Water Assessment Summary
PWS ID Number NY0110127**

The NYS DOH has completed a Source Water Assessment for the Watervliet Reservoir. The assessment is summarized below. The assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how likely contaminants could enter the reservoir. The susceptibility rating is an estimate of the potential for contamination. It does not mean that the water delivered to your home is or will become unsafe to drink. See section “Are there contaminants in our drinking water?” of this report, for information concerning low levels of contaminants in your water.

This assessment found the use of agricultural lands in the assessment area results in a potential for protozoa contamination. Other facilities such as landfills and golf courses could release other contaminants, such as pesticides and phosphorous. It should be noted that hydrologic characteristics (e.g., basin shape and flushing rates) generally make reservoirs sensitive to existing and new sources of phosphorus and microbial contamination

Watervliet’s water treatment plant performs multi level treatment to insure you receive safe drinking water. Additionally, as this annual report shows your water is routinely monitored for a great number of potential contamination.

CITY OF WATERVLIET TABLE OF DETECTED CONTAMINANTS
Public Water Supply Identification Number NY0110127

Contaminant	Violation Y/N	Date of sample	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants							
Turbidity ¹ (highest level detected)	N	3/24/22	2.27	NTU	N/A	TT=1 NTU	Soil runoff
March 2022	Y		94.6%			TT= 95% samples < 0.3	
Inorganic Contaminants							
Barium	N	9/14/22	39.4	µg/l	2000	MCL=2000	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chloride	N	9/14/22	117	mg/l	N/A	MCL=250	Geology; Naturally occurring
Copper range	N	8/13/20-8/24/20	0.186 ³ 0.0175-0.3833	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead range	N	8/13/20-8/24/20	2.1 ⁴ ND-3.2	µg/l	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits;
Manganese	N	9/14/22	2.1	µg/l	N/A	MCL=300	Natural sources
Nitrate	N	9/14/22	0.149	mg/l	10	MCL=10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Odor	Y	9/14/22	8	units	N/A	MCL=3	
Nickel	N	9/14/22	0.7	µg/l	N/A	N/A	Naturally occurring
pH	N	9/14/22	7.27	units	N/A	6.5-8.5	
Sodium ⁵	N	9/14/22	67.8	mg/l	N/A	N/A	Geology; Road Salt
Zinc	N		89.2	µg/l	N/A	MCL=5000	Galvanized pipe; corrosion inhibitor
Synthetic Organic Chemicals							
PFBS	N	9/12/22	0.79	ng/l	N/A	10 ^{8,9,10}	Released into the environment from widespread use in commercial and industrial applications
PFBA			3.0				
PFHpA			1.1				
PFHxS			0.66				
PFHxA			1.6				
PFOS			2.3				
PFOA			1.8				
PFPeA			2.4				
Total Organic Carbon							
Treated Water	Y ⁶	Monthly sampling 2022	2.6-4.3	N/A	Compliance ratio 0.91-1.17	TT	Organic material both natural and manmade; Organic pollutants, decaying vegetation,
Stage 2 Disinfection Byproducts (quarterly samples from 2 sites)							
Chlorine (based on daily samples) Range of chlorine residual	N	daily testing	0.81 0.52-1.34	mg/l	MRDLG N/A	MRDL MCL=4	Used in the treatment and disinfection of drinking water
Haloacetic Acids [HAA5] (average) ⁷ Range of values for HAA5	N	1/11/22 4/12/22 7/12/22 10/11/22	LRAA1 58.6 LRAA2 44 22.6-51	µg/l	N/A	MCL=60	By-product of drinking water chlorination

TTHM [Total Trihalomethanes] (average) ⁷ Range of values for Total Trihalomethanes	Y	1/11/22 4/12/22 7/12/22	LRAA1 82.9 41.5-73.6	µg/l	N/A	MCL=80	By-product of drinking water chlorination
	N	10/11/22	LRAA2 73.3 39.4-68				

FOOTNOTES-

1. Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of our filtration system. Level detected represents the highest level detected. Our highest single turbidity measurement for the year occurred 3/24/22 (2.27 NTU). State regulations require that entry point March **2022 was the month when we had** the fewest measurements meeting the treatment technique for turbidity, the levels recorded were below the acceptable range allowed and did constitute a treatment technique violation. We also measure turbidity in the distribution system 5 times a week with 0.218 NTU being the average.
3. The level presented represents the 90th percentile of 20 test sites. The action level for copper was not exceeded at any of the 20 sites tested.
4. The level presented represents the 90th percentile of 20 test sites. The action level for lead was not exceeded at any of the 20 sites tested.
5. Water containing more than 20 mg/l should not be consumed by persons 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.
6. The Interim Enhanced Surface Water Treatment Rule (IESWTR) requires monitoring of raw and finished water Total Organic Carbon (TOC). Depending on the raw water alkalinity value, proper water treatment should remove between 15% to 35% of the raw water TOC thus reducing the amount of disinfection byproducts produced. The removal or compliance ratio should be 1 or greater. Our RAA compliance ratio for the 1st and 2nd quarters was less than 1.
7. The average is based on a LRAA. The average shown represents the highest LRAA for 2022. The highest HAA5 and THM was in the 1st quarter of 2022.
8. Only PFOA and PFOS have a regulatory limit of 10 ng/l each.
9. All perfluoroalkyl substances, besides PFOA and PFOS, are considered Unspecified Organic Contaminants (UOC) which have an MCL =0.05 mg/L.
10. USEPA Health Advisory Levels identify the concentration of a contaminant in drinking water at which adverse health effects and/or aesthetic effects are not anticipated to occur over specific exposure durations. Health Advisory Levels are not to be construed as legally enforceable federal standards and are subject to change as new information becomes available. PFBS and HFPO-DA also have Health Advisory Levels.

GLOSSARY

Non-Detects (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.

Parts per billion (ppb) or Micrograms per liter (µg/l) - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Parts per trillion (ppt) or Nanograms per liter (ng/l) - one part per trillion corresponds to one part of liquid to one trillion parts of liquid.

90th Percentile Value- The values reported for lead and copper represent the 90th percentile. 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

Action Level - the concentration of a contaminant, which, if exceeded, triggers treatment, or other requirements, which a water system must follow.

Maximum Contaminant Level - The "Maximum Allowed" (MCL) is 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 The "Goal" (MCLG) is 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.

Locational Running Annual Average (LRAA): The LRA is calculated by taking the average of the four most recent samples collected at each individual site.

N/A-Not applicable

Appendix A

New York State Sanitary Code Compliance Monitoring Requirements- Compounds Analyzed that were Below Limits of Detection

CITY OF WATERLIET TEST RESULTS						
Public Water Supply Identification Number NYS700119						
CONTAMINANT	MONITORING FREQUENCY		CONTAMINANT	CONTAMINANT	MONITORING FREQUENCY	
Asbestos	N/A No Asbestos pipe		POC's (Volatile Organic Compounds)			
			Benzene	Trans-1,3-Dichloropropene	Monitoring requirement is one sample annually 9/14/22 Non-Detect	
Antimony	Monitoring requirement is 1 sample annually Sample from 9/14/22		Bromobenzene	Ethylbenzene		
Cadmium			Bromochloromethane	Hexachlorobutadiene		
Chromium			Bromomethane	Isopropylbenzene		
Cyanide			N-Butylbenzene	p-Isopropyltoluene		
Fluoride			sec-Butylbenzene	Methylene Chloride		
Mercury			Tert-Butylbenzene	n-Propylbenzene		
			Carbon Tetrachloride	Styrene		
Beryllium		Non-Detect		Chlorobenzene		1,1,1,2-Tetrachloroethane
Silver				2-Chlorotoluene		1,1,2,2-Tetrachloroethane
Thallium				4-Chlorotoluene		Tetrachloroethene
Arsenic			Dibromomethane	Toluene		
			1,2-Dichlorobenzene	1,2,3-Trichlorobenzene		
			1,3-Dichlorobenzene	1,2,4-Trichlorobenzene		
			1,4-Dichlorobenzene	1,1,1-Trichloroethane		
			Dichlorodifluoromethane	1,1,2-Trichloroethane		
			1,1-Dichloroethane	Trichloroethene		
			1,2-Dichloroethane	Trichlorofluoromethane		
Iron	Monitoring requirement is at State discretion Sample from 9/14/22		1,1 Dichloroethene	1,2,3-Trichloropropane		
Color			cis-1,2 Dichloroethene	1,2,4-Trimethylbenzene		
Sulfate			Trans-1,2-Dichloroethene	1,3,5-Trimethylbenzene		
Iron			1,2 Dichloropropane	m-Xylene		
			1,3 Dichloropropane	o- Xylene		
			2,2 Dichloropropane	p-Xylene		
			1,1 Dichloropropene	Vinyl Chloride		
			Cis-1,3-Dichloropropene	MTBE		
			Total Coliform		Monitoring is 12 samples/month	
		E. coli		Non-Detect		
		Radiological Parameters				
			Radium 226	Samples from 9/14/22	Monitoring is 1 sample every 6-9 years Non-Detect	
			Radium 228	Samples from 9/14/22		
Synthetic Organic Chemicals						
Synthetic Organic Chemicals (Group I)			Synthetic Organic Chemicals (Group II)			
Alachlor	Aldicarb		Aldrin	Benzo(a)pyrene	Monitoring requirement is 1 sample every 18 months; Sample from 4/19/22 Non-Detect	
Aldicarb Sulfoxide	Aldicarb Sulfone		Butachlor	Carbaryl		
Atrazine	Carbofuran		Dalapon	Di(2-ethylhexyl) adipate		
Chlordane	Dibromochloropropane		Di(2-ethylhexyl) phthalate	Dicamba		
2,4-D	Endrin		Dieldrin	Dinoseb		
Ethylene Dibromide	Heptachlor		Diquat*	Endothall*		
Lindane	Methoxyhlor		Glyphosate*	Hexachlorobenzene		
PCB's	Toxaphene		Hexachlorocyclopentadiene	3-Hydroxycarbofuran		
2,4,5-TP (Silvex)	PFOA		Methomyl	Metolachlor		
1,4Dioxane			Metribuzin	Oxamyl vydate		
			Pichloram	Propachlor		
			Simazine	2,3,7,8-TCDD (Dioxin)*		
					*State waiver does not require monitoring these compounds	

