

City of Mechanicville
Annual Drinking Water Quality Report for 2017
36 North Main Street, Mechanicville, NY 12118
(Public Water Supply Identification Number NY4500166)

INTRODUCTION

To comply with State regulations, the City of Mechanicville, 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. We are very pleased to provide you with this year's Annual Water Quality Report. Last year, we conducted tests for over 80 contaminants. We detected 1 of those contaminants at a level higher than the State allows in 2 of the 4 monitoring quarters. As we told you at the time, our water temporarily exceeded a drinking water standard and we modified our treatment process to rectify this problem. This report is 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 New York 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. Jim Horner; Water Treatment Plant Supervisor, City of Mechanicville Water Department, 33 George Thompson Road, Mechanicville, NY 12118; Telephone (518) 664-3751, Monday – Friday between the hours of 6:00 AM and 2:00 PM.* We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the 1st and 3rd Wednesday of each month, 7:00 PM at the Mechanicville Senior Citizen Center, 180 North Main Street, Mechanicville, NY 12118; telephone number (518) 664-9884.

WHERE DOES OUR WATER COME FROM?

The City of Mechanicville operates a surface water filtration plant. Two reservoirs feed this system: The Mechanicville Reservoir, located in Luther Woods has a storage capacity of 65 million gallons and is the primary source of water; The Terminal Reservoir, located approximately one mile downstream at George Thompson Road (list capacity of terminal reservoir); and the Treatment Plant has a 2.5 million gallon storage capacity.

The Mechanicville Water Treatment Plant is a U.S. Filter Modular Aquarius (AQ-300B) which consists of flocculation, clarification and filtration for water treatment. The plant is automatically controlled and packaged in (3) steel tanks producing 2,100 gallons/minute. The treatment process consists of coagulation using polyaluminum chloride to cause small particles to stick together when the water is mixed forming larger heavier particles. Sedimentation allows the newly formed larger particles to settle out naturally in inclined tube settlers. The mixed media filter bed consists of anthracite coal, silica sand and garnet sand which removes smaller particles by trapping them in the spaces between the sand grains. Also used in the treatment process is sodium permanganate which is used for taste and odor control, color reduction and iron and manganese oxidation. The filtered water from the treatment unit is fed into the clearwell. The water is then pumped out of the clearwell and chlorinated with liquid sodium hypochlorite. At this point the water flows into two (2) chlorine contact tanks. They are circular; epoxy coated steel bolted steel and concrete tanks with interior baffling and a storage capacity of 250,000 gallons each. The baffling in the tank provides increased detention time and adequate time for the water to be disinfected by the chlorine. Three (3) distribution water pumps operating in lead lag will draw the water from the two chlorine contact tanks into the distribution system and into two (2) steel storage tanks with a combined capacity of 2.5 million gallons to provide adequate fire protection

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

Water is served through approximately 1,443 residential services to a population of approximately 5,200 persons. Water is also supplied to people in the Towns of Stillwater, Schaghticoke and Halfmoon. Our average daily demand is 829,910 gallons. Our single highest day was 1,139,000 gallons. The total water produced in 2017 was 298,053,500 gallons. The amount of water delivered to customers was 167,231,685.39 gallons. The amount of water lost 130,821,814.61 gallons or 39%. All services are metered. The ratio of water produced to the water billed averages 59%. The City of Mechanicville bills its customers semi-annually for the periods April through September and October through March. The residential water rate for those in the district is \$3.09 per 100 cubic feet (cf) or \$4.13 per 1000 gallons; outside districts (Towns of Schaghticoke and Halfmoon) are billed at \$4.58 per 100 cubic feet or \$6.12 per

1000 gallons. The Town of Stillwater outside rate is \$4.20 per 100 (cf) or \$7.41 per 1000 gallons. The outside rate for commercial customers is \$5.04 per 100 (cf) or \$6.70 per 1000 gallons. The Pan Am Southern Railroad is billed \$6.09 per 100 (cf) or \$8.10 per 1000 gallons.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

In accordance with State regulations, the City of Mechanicville routinely monitors your drinking water for numerous contaminants. We test your drinking water for inorganic contaminants, lead and copper, nitrate, volatile organic contaminants, synthetic organic contaminants and disinfection byproducts. In addition, we test two (9) samples in the distribution system for coliform bacteria each month. The table presented below 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 and is noted. 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 New York State Department of Health Glens Falls District Office at (518) 793-3893.

WHAT DOES THIS INFORMATION MEAN?

As you can see by the table on page 4, we had 2 violations. We exceeded the MCL for the Haloacetic Acids in the 1st and 2nd quarters of 2017 and are required to furnish the following information:

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.

We were issued 2 Notices of Violation for exceeding the HAA5 MCL for the first and second quarters of 2017. We will continue to adjust our treatment processes to minimize the HAA5 concentration. We have been doing monthly THM/HAA5 monitoring to better assess our treatment processes for minimizing disinfection byproducts.

We were unable to meet the monthly turbidity performance standard for finished water in July and August. Conventional and direct filtration water treatment plants must meet the performance standard of 0.3 NTU in 95% of the samples collected.

In addition, the turbidity level of representative samples of the filtered water must at no time exceed 1 NTU. The City of Mechanicville exceeded this standard. As a precaution, the New York State Department of Health issued a boil water order, which lasted from 8/3/17 to 8/15/17. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth.

Inadequately treated water 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.

The City has conducted a comprehensive study of the water treatment plant's filtration processes.

We have learned through our monitoring and testing that some contaminants have been detected; however, these compounds were detected below New York State requirements. MCL's are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2017, our system was cited for failing to notify the state for turbidity exceedances and ongoing complaints of discolored water in accordance with the New York State Sanitary Code. In addition, we were cited for failing to

distribute public notification for the 2nd quarter haloacetic acid exceedance within 30 days of receiving a notice of violation from the Health Department. The City of Mechanicville was in compliance with other applicable State drinking water monitoring and reporting requirements.

We would like to summarize for our residents the sequence of events and the reasons we were issued the violations;

1. Surface Water Turbidity Performance Standards: Conventional and direct filtration surface water treatment plants must meet the performance standard of 0.3 NTU in 95% of the samples collected. A violation occurs if more than five percent of the composite filter effluent measurements taken each month exceed the performance standard values. The City of Mechanicville was in violation of this standard for the month of July 2017.

In addition, the turbidity level of representative samples for the filtered water must at no time exceed 1 NTU. The City of Mechanicville exceeded this standard on August 2, 2017. A boil water order was issued.

2. Failure to make State notification: The supplier of water shall make State notification within 48 hours of learning of the existence or potential existence of a violation that may pose a risk to public health, exceedance of the 0.3 NTU performance standard requires State notification. The City of Mechanicville was in exceedance of this standard on July 5 and July 6 and again of July 28-31. The State was notified of the turbidity exceedance on August 1 when the operator was contacted about discolored water complaints. The State was notified as required when turbidity exceeded the 1 NTU performance standard.

3. Haloacetic Acid MCL: The City of Mechanicville has been in exceedance of the MCL for Haloacetic Acids since the 3rd quarter of 2016. A notice of violation was sent to Mr. Salvi on June 19, 2017.

4. Failure to make Public notification: Part5-1.52 Table 13 requires Tier 2 public notification for HAA5 MCL exceedances. In accordance with Part5-1.78(d)(1) the supplier of water must provide public notification no later than 30 days after the system learns of a violation or situation that requires Tier 2 notification was performed on August 18, 2017.

Additionally, City of Mechanicville was instructed to conduct a water treatment plant study to ensure it remains compliant with all NYS Sanitary Code requirements. A 15 point corrective action plan and timetable was given to meet these objectives.

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

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 City of Mechanicville 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>

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 source water assessment provides information on the potential contaminant threats to public drinking water sources:

- ◆ each source water assessment will: determine where water used for public drinking water comes from (delineate the source areas)
- ◆ Inventory potential sources of contamination that may impact public drinking water sources

- ◆ Assess the likelihood of a source water area becoming potential contaminated

A SWAP summary for our water supply has been completed by NYSDOH and attached to this report.

WATER CONSERVATION TIPS

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

- *Use water saving showerheads*
- *Repair all leaks in your plumbing system*
- *Water your lawn sparingly early morning or late evening*
- *Do only full loads of wash and dishes*
- *Wash your car with a bucket and hose with a nozzle*
- *Don't cut the lawn too short; longer grass saves water*

CAPITAL IMPROVEMENTS

During 2017 the following projects were completed:

- Chlorine contact tanks were cleaned
- Filters were drained and inspected
- One distribution tank was cleaned and painted
- The following projects are planned for 2018
- New SCADA system
- New filter media
- Dredging the Lower Reservoir

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. You will be informed of system improvements in future Annual Water Quality Reports. 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.

**Mechanicville City
PWSID NY4500166
AWQR SWAP Summary**

The NYS DOH has evaluated this Public Water System's (PWS) susceptibility to contamination under the Source Water Assessment Program (SWAP), and their findings are summarized in the paragraph 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 PWS. This PWS provides treatment and regular monitoring to ensure the water delivered to consumers meets all applicable standards.

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. However, there is reason to believe that land cover data may over estimate the percentage of pasture in the assessment area. No permitted discharges are found in the assessment area.

There are no noteworthy contamination threats associated with other discrete contaminant sources. 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.

A copy of the full Source Water Assessment, including a map of the assessment area, is available for review by contacting us at the number provided in this report.

CITY OF MECHANICVILLE TABLE OF DETECTED CONTAMINANTS
Public Water Supply Identification Number NY4500166

Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants						
Turbidity (highest turbidity sample from 8/4/17)	Y	1.041 ^{1,2}	NTU	N/A	TT=1.0 NTU	Soil runoff
July 2017 was below the required performance standard		<95%			TT=95% samples < 0.3	
Inorganic Contaminants (samples from 10/26/17 unless otherwise noted)						
Barium	N	42.8	ppb	2000	2000	Naturally occurring
Chloride	N	27.6	ppm	N/A	250	Naturally occurring or indicative of road salt contamination.
Copper (samples from 9/7/17-9/20/17)	N	0.33 ³	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Range of copper concentrations		ND-0.56				
Lead (samples from 9/7/17-9/20/17)	N	7 ³	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Range of lead concentrations		ND-24				
Manganese 8/1/17-12/31/17 (average) range	N	9.2	ppb	N/A	300	Naturally occurring
		ND-34.9				
Nickel	N	0.87	ppb	N/A	N/A	Erosion of natural deposits
pH	N	7.73	units		6.5-8.5	
Sodium ⁴	N	13.9	ppm	N/A	N/A	Geology; Road Salt
Sulfate	N	30.9	ppm	N/A	250	Geology
Disinfection Byproducts (Quarterly samples from 2/16/17 5/18/17, 8/15/17, 10/19/17, 11/16/17 & 12/21/17)						
Stage 2 Haloacetic Acids (HAA5)(Average) ⁵	Y	63.4	ppb	N/A	60	By-product of drinking water chlorination
Range of values for HAA5		4.51-58.6				
Stage 2 TTHM[Total Trihalomethanes](Average) ⁵	N	61.6	ppb	0	80	By-product of drinking water chlorination
Range of values for TTHM		23.4-120				
Chlorine Residual (average) range	N	1.21	ppm	MRDLG	MRDL	Used in the treatment and disinfection of drinking water
		0.76-2.13		N/A	4	
Total Organic Carbon⁷ (monthly samples from 2017)						
Total Organic Carbon Monthly Compliance Ratio	N	1.01-1.85	N/A	Compliance ratio >=1	TT	Organic material both natural and man made; Organic pollutants, decaying vegetation.

FOOTNOTES-

1. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. Level detected represents the highest level detected. Distribution system turbidity performed 5 times a week with 1.53 NTU being highest level detected and 0.283 NTU being the average level detected.
2. This number represents the weighted average of the 3-individual filter turbidimeters.
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 exceeded at 1 of the 20 sites tested.
5. Water containing more than 20 mg/l should not be consumed by persons on severely restricted sodium diets.
6. The average is based on a Locational Running Annual Average (LRAA). The average shown is the highest LRAA for the 2 sites monitored in of 2017. The highest LRAA for the HAA5s and THMs was in the 2nd quarter. We exceeded the MCL for the HAA5's in the 1st and 2nd quarters at one of the sites monitored.
7. 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 50% of the raw water TOC thus reducing the amount of disinfection byproducts produced.

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 - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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.

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

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.

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

N/A-Not applicable

