

Jamestown BPU Annual Water Quality Report Year 2018

**An annual report on water quality
within the
Jamestown Board of Public Utilities
Water Territory
Jamestown, NY**



INTRODUCTION

To comply with State regulations, The City of Jamestown Board of Public Utilities annually issues this report describing our water system, our water quality and other items that are important for our customers to know about their drinking water such as where it comes from and how it is delivered to your homes and businesses. The goal of this report is to raise your understanding of drinking water, to raise awareness for the need to protect our drinking water sources and the importance of maintaining and upgrading the water system which allows the BPU to continue to deliver safe, high quality drinking water to all of our customers.



*Annual Drinking Water
Quality Report
Year 2018
City of Jamestown
Board of Public Utilities
92 Steele Street
Jamestown, NY 14701
Public Water Supply
ID#NY0600366*

If you have any questions about this report or concerning your drinking water, please contact Rebecca Robbins, Communications Coordinator, at (716)661-1680. We want you to be informed about your drinking water. If you want to learn more, please attend any of our regularly scheduled meetings of the Board of Public Utilities. The meetings are held at 4 p.m. on the third or fourth Monday of each month in the BPU Board Room at 92 Steele Street and the schedule is available at www.jamestownbpu.com or by calling (716)661-1680. We encourage public interest in our community's decisions affecting drinking water.

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

Our water system serves approximately 46,712 customers through 17,483 service connections. Our water source consists of eight artesian wells in the Cassadaga aquifer and four artesian wells in the Conewango aquifer. Aquifers are areas where enough groundwater (water contained in the soil and rock material below the surface of the earth) exists to supply wells and springs. The Jamestown aquifers are confined or sandwiched between layers of relatively impermeable materials such as clay and shale. The BPU operates eight wells, which draw water from the Cassadaga aquifer, having a watershed of 140 square miles. The BPU also operates four wells in Poland Center drawing water from the Conewango aquifer, which has a watershed of 290 square miles.

The water is collected in a receiving tank, then pumped by a high-pressure mechanical delivery process through the transmission and distribution system. If the water is not used within the day, it back feeds into storage at a 10,000,000 gallon reservoir for future distribution. Two underground reservoirs in the city can store approximately 11,500,000 gallons of treated water. The Lakewood (above ground) water tank contains 2,000,000 gallons of treated water. Two above-ground storage tanks in the Jamestown system each hold an additional 500,000 gallons of raw water (water without chlorine and fluoride.) An elevated tank at the County Airport holds 150,000 gallons of treated water. During 2018, our system did not experience any restriction of our water source. Your drinking water is treated with sodium hypochlorite (for disinfection) and hydrofluoro-silicic acid (for tooth decay prevention) prior to distribution.

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. 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 2018, monitoring showed fluoride levels in your water were in the optimal range 60% of the time.

SOURCE WATER ASSESSMENT PROGRAM (SWAP) SUMMARY

The New York State Department of Health has completed a source water assessment for the BPU system, under the Source Water Assessment Program (SWAP). 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. It does not indicate that any contamination has or will occur. This water supply provides treatment and regular monitoring to ensure that the water that is delivered to consumers meets all applicable standards. This assessment found an elevated susceptibility to contamination. The amount of pasture in the assessment area results in a high potential for protozoa contamination. There is also a high density of sanitary wastewater discharges in the watershed, which results in elevated susceptibility for nearly all contaminant categories. However, the total amount of wastewater discharged to surface water is not high enough to considerably raise the potential for contamination. There are no noteworthy contamination threats associated with other discrete contaminant sources.

As mentioned before, BPU water is derived from 12 drilled wells, 8 in the Cassadaga well field, and 4 in the Poland Center well field. The source water assessment has rated the wells in both well fields as having a medium-high susceptibility to microbials, viruses, and nitrates, and a medium susceptibility to industrial solvents, and other industrial contaminants. The ratings for the Cassadaga well field are due primarily to the close proximity of permitted septic systems or other wastewater treatment systems to the wells, a facility listed on the State's Toxic Release Inventory, and oil and gas well drilling in the area. The ratings for our Poland Center Well field are primarily due to the close proximity of permitted septic systems or other wastewater treatment systems to the wells, and oil and gas well drilling in the area. There is also the presence of a chemical bulk storage facility in its inner zone. In addition, both well fields draw water from a confined aquifer (an aquifer bounded above and below by geology that restricts the passage of ground water), the aquifer recharge area (the section of land that receives precipitation and allows it to infiltrate into the aquifer) is considered vulnerable to potential sources of contamination.

While the source water assessment rates BPU wells as being susceptible to microbials, please note that BPU water is disinfected to ensure that the finished water delivered into your home meets New York State's drinking water standards for microbial contamination. A copy of the assessment, including a map of the assessment area, can be obtained by contacting us, as noted above.

The BPU designed its water supply emergency plan according to guidelines recommended by the NYS Department of Health. The plan was subsequently submitted to and approved by the New York State Department of Health.

FACTS AND FIGURES

Our water system serves 46,712 people in homes, businesses, industries and schools. The BPU now manages 17,483 active meter connections that carry the water to all its customers. The total number of gallons of water produced in 2018 was 1,824,759,000 with 1,122,778,668 gallons delivered to customers. Our highest single production day was February 6, 2018 at 6.81 million gallons. An additional 406,478,044 gallons (22.28% of daily pumpage) was unbilled due to flushing, repaired leaks, fire fighting, bulk water sales, treatment plant use and street cleaning; leaving 295,502,288 gallons lost and unaccounted for (16.19%) in meter under registration, unknown use and hidden leaks. The average daily production of raw water treated and pumped into the distribution system was 5.00 million gallons. In 2018, water customers in Jamestown were charged \$2.09 per unit of water. A unit of water is equal to 100 cubic feet of water or 748 gallons.

WHY SAVE WATER AND HOW TO AVOID WASTING IT?

Although our system has an adequate amount of water to meet present and future demands, there are a number of reasons why it is important to conserve water: saving water saves energy and some of the costs associated with both of these necessities of life; saving water reduces the cost of energy required to pump water and the need to construct costly new wells, pumping systems and water towers; and saving water lessens the strain on the water system during a dry spell or drought, helping to avoid severe water use restrictions so that essential 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: automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded, so load it to capacity. Turn off the tap when brushing your teeth. Check every faucet in your home for leaks. 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. 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 the meter moved, you have a leak.



FOR WATER CONSERVATION INFORMATION, PLEASE REFER TO THE FOLLOWING WEBSITES:

www.jamestownbpu.com and www.h2ouse.org.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the State regulations require, we routinely test your drinking water for numerous contaminants. These contaminants include: total coliform, inorganic compounds, nitrate, nitrite, lead and copper, volatile organic compounds, total trihalomethanes, haloacetic acids, radiological and synthetic organic compounds. The table presented on the next page depicts which compounds were detected in your drinking water. The State allows us to test for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. It should be noted that all drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791) or the Chautauqua County Health Department at (716)753-4481.



Detectable Contaminants				2018			
Contaminant	Entry Pt	Date	Violation	Result	Units	MCL	MCLG
Disinfectants				Avg / Min - Max			
Chlorine	Cassadaga Likely Source of Contamination	Daily	No	1.03 / 0.88-1.32 Water Additive used to control microbes	mg/l	4.00	N/A
Chlorine	Clay Pond Likely Source of Contamination	Daily	No	1.03 / 0.87-1.22 Water Additive used to control microbes	mg/l	4.00	N/A
Chlorine	Lakewood Likely Source of Contamination	Daily	No	0.98 / 0.67-1.96 Water Additive used to control microbes	mg/l	4.00	N/A
Fluoride	Cassadaga Likely Source of Contamination	Daily	No	0.76 / 0.60-0.89 Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories	mg/l	2.20	N/A
Fluoride	Clay Pond Likely Source of Contamination	Daily	No	0.79 / 0.6-0.98 Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories	mg/l	2.20	N/A
Lead and Copper				Avg / Min - Max			
Lead ²	Distribution Likely Source of Contamination	7/12/2017-7/25	No	2.6 / ND-40.9 Corrosion of household plumbing systems; erosion of natural deposits	ug/l	15	0
Copper ¹	Distribution Likely Source of Contamination	7/12/2017-7/25	No	166 / 24-322 Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	ug/l	1300	1300
Inorganic Contaminants							
Nitrate	Cassadaga Likely Source of Contamination	8/8/18	No	0.508 Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	mg/l	10	N/A
Arsenic	Cassadaga Likely Source of Contamination	8/8/18	No	1.7 Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes	ug/l	10	N/A
Barium	Cassadaga Likely Source of Contamination	8/8/18	No	0.316 Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	mg/l	2	2
Manganese	Cassadaga Likely Source of Contamination	5/4/16	No	77.2 Naturally occurring; indicative of landfill contamination	ug/l	300	N/A
Sodium ³	Cassadaga Likely Source of Contamination	5/4/16	No	18.2 Naturally occurring; road salt; water softeners; water containing more than 20 mg/l of sodium should not be used for drinking by people on severely restricted sodium diets	mg/l	See health effects	N/A
Zinc	Cassadaga Likely Source of Contamination	5/4/16	No	0.016 Naturally occurring; mining waste; zinc has no health effects unless detected in very high concentrations	mg/l	5	N/A
Nitrate	Clay Pond Likely Source of Contamination	8/8/18	No	1.47 Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	mg/l	10	10
Barium	Clay Pond Likely Source of Contamination	8/8/18	No	0.472 Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	mg/l	2	2
Sodium ³	Clay Pond Likely Source of Contamination	5/4/16	No	34.3 Naturally occurring; road salt; water softeners; water containing more than 20 mg/l of sodium should not be used for drinking by people on severely restricted sodium diets	mg/l	See health effects	N/A
Zinc	Clay Pond Likely Source of Contamination	5/4/16	No	0.006 Naturally occurring; mining waste; zinc has no health effects unless detected in very high concentrations	mg/l	5	N/A
Secondary Inorganics				Avg / Min - Max			
Chloride		2/2/09	No	45 / 30-60 Likely source is naturally occurring or indicative of road salt contamination	mg/l	250	NA
Sulfate		9/30/11	No	16.7 / 16.3-17.0 Likely source is naturally occurring	mg/l	250	NA

Detectable Contaminants (continued) 2018

Contaminant	Entry Pt	Date	Violation	Result	Units	MCL	MCLG
Stage II Disinfection Byproducts				Avg / Min - Max			
Trihalomethanes	Airport Likely Source of Contamination	Quarterly	No	16.7 / 8.8-25.7	ug/l	80	NA
				Byproducts of drinking water chlorination. TTHM's are formed when source water contains large amounts of organic matter.			
Trihalomethanes	WWTP Likely Source of Contamination	Quarterly	No	3.7 / 0.86-5.58	ug/l	80	NA
				Byproducts of drinking water chlorination. TTHM's are formed when source water contains large amounts of organic matter.			
Trihalomethanes	Busti FD Likely Source of Contamination	Quarterly	No	12.1 / 4.7-19.2	ug/l	80	NA
				Byproducts of drinking water chlorination. TTHM's are formed when source water contains large amounts of organic matter.			
Haloacetic Acids	BOCES Likely Source of Contamination	Quarterly	No	1.05 / ND-1.90	ug/l	60	NA
				Byproducts of drinking water chlorination			
Trihalomethanes	BOCES Likely Source of Contamination	Quarterly	No	12.32 / 4.08-23.8	ug/l	80	NA
				Byproducts of drinking water chlorination. TTHM's are formed when source water contains large amounts of organic matter.			
Radiological							
Gross Alpha	Cassadaga Likely Source of Contamination	5/4/16	No	0.046	pCi/l	15	NA
				Likely source is from the decay of natural deposits			
Gross Beta	Cassadaga Likely Source of Contamination	5/4/16	No	1.310	pCi/l	15	
				Likely source is from the decay of natural deposits			
Radium 226	Cassadaga Likely Source of Contamination	5/4/16	No	0.117	pCi/l	5 pCi/l combined 226 and 228	
				Likely source is from the decay of natural deposits			
Radium 228	Cassadaga Likely Source of Contamination	5/4/16	No	0.158	pCi/l	5 pCi/l combined 226 and 228	
				Likely source is from the decay of natural deposits			
Total Uranium	Cassadaga Likely Source of Contamination	5/4/16	No	0.269	pCi/l	20.00	
				Likely source is from the decay of natural deposits			
Unregulated Contaminant Monitoring UCMR3 2013				Avg / Min - Max			
Molybdenum	Cassadaga Likely Source of Contamination	2/21/2013 8/8/2013	Not Regulated	0.75 / ND-1.0	ug/l	NA	NA
				Naturally-occurring element found in ores and present in plants, animals and bacteria; commonly used form molybdenum trioxide used as a chemical reagent			
Strontium	Cassadaga Likely Source of Contamination	2/21/2013 8/8/2013	Not Regulated	135 / 122-148	ug/l	NA	NA
				Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions			
Chromium CASRN	Cassadaga Likely Source of Contamination	2/21/2013 8/8/2013	Not Regulated	0.215 / ND-0.33	ug/l	NA	NA
				See Chromium 6 for source information			
Chlorate	Cassadaga Likely Source of Contamination	2/21/2013 8/8/2013	Not Regulated	124 / 104-144	ug/l	NA	NA
				Agricultural defoliant or desiccant; used in production of chlorine dioxide			
Strontium	Clay Pond Likely Source of Contamination	2/21/2013 8/8/2013	Not Regulated	79 / ND-143	ug/l	NA	NA
				Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions			
Chromium CASRN	Clay Pond Likely Source of Contamination	2/21/2013 8/8/2013	Not Regulated	0.23 / ND-0.36	ug/l	NA	NA
				See Chromium 6 for source information			
Chromium 6	Clay Pond Likely Source of Contamination	2/21/2013 8/8/2013	Not Regulated	0.059 / 0.038-0.079	ug/l	NA	NA
				Naturally-occurring element; used in making steel and other alloys. Chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation.			
Chlorate	Clay Pond Likely Source of Contamination	2/21/2013 8/8/2013	Not Regulated	39.6 / ND-69.2	ug/l	NA	NA
				Agricultural defoliant or desiccant; used in production of chlorine dioxide			
Strontium	BOCES Likely Source of Contamination	2/21/2013 8/8/2013	Not Regulated	123.5 / 114-133	ug/l	NA	NA
				Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions			
Chromium CASRN	BOCES Likely Source of Contamination	2/21/2013 8/8/2013	Not Regulated	0.20 / ND-0.30	ug/l	NA	NA
				See Chromium 6 for source information			
Chlorate	BOCES Likely Source of Contamination	2/21/2013 8/8/2013	Not Regulated	129.5 / 123-136	ug/l	NA	NA
				Agricultural defoliant or desiccant; used in production of chlorine dioxide			

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1-The level presented represents the 90th percentile of the 30 sites tested for copper. 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 copper values detected at your water system. In this case, 30 samples were collected and the 90th percentile value was the 27th highest value (0.19). The action level for copper was not exceeded at any of the test sites.

2-The level presented represents the 90th percentile of the 30 sites tested. One of the thirty sampled sites tested above the action level. The site was re-tested and the result was well below the action level.

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

Definitions:

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

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

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

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

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).

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.

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

WHAT DOES THIS INFORMATION MEAN?

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. The BPU collects fifty routine total coliform samples per month throughout our water distribution system. The BPU had no water quality (MCL) violations during 2018, however we did incur a monitoring violation for Stage 2 Disinfection Byproducts (Total Trihalomethanes and Total Haloacetic Acids). These tests should have been taken during February and ours were taken in March, disqualifying that set of samples for our monitoring requirements. Therefore, we cannot be sure of the quality of your drinking water during that time period. Please note that the water samples tested in March were well below the allowable limits.

Regarding lead testing, one site of the 30 samples tested above the lead action level although after re-testing the exact same site the result was well below the lead action level. We are however 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 in your home's plumbing. The Jamestown Board of Public Utilities 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>.

IS THE BPU WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2018, 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. 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 (800-426-4791).

In our continuing efforts to maintain a safe and dependable water supply, it may be necessary to make improvements in your water system. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements.

In 2018, the BPU Water Department installed approx. 2,700 feet of water main. This included the installation of water main on Howard Street, Kelsey Place, North Main Street, West 2nd Street, and West 4th Street in Jamestown, totaling approx. 1,900 feet. In Celoron, a total of approx. 800 feet of water main was installed on East 7th Street and Butler Avenue.

CLOSING: Thank you for allowing us to continue to provide your family with quality drinking water this year. We ask that all our customers help us protect our water sources which are the heart of our community. Please call BPU Communications if you have questions at (716)661-1680.

5/2/19