Jamestown BPU Annual Water Quality Report Year 2014

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 2014
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 for 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 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 2014, our system did not experience any restriction of our water source. Your drinking water is treated with sodium hypochlorite (for disinfection) and hydrofluorosilicic 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 2014, monitoring showed fluoride levels in your water were in the optimal range 56% 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, based on available information. Possible and actual threats to this drinking water source were evaluated. The New York State source water assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how easily contaminants can move through the subsurface to the wells. The susceptibility rating is an estimate of the potential for contamination of the source water, it does not mean that the water delivered to consumers is, or will become, contaminated. While nitrates (and other inorganic contaminants) were detected in BPU water, 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 from natural sources. The presence of contaminants does not necessarily indicate that the water poses a health risk. All detected contaminants are within normal background levels found in the County. See the section "Are there contaminants in our drinking water?" for a list of the contaminants that have been detected. The source water as-

sessments provide resource managers with additional information for protecting source waters into the future.

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. In addition, the wells 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 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 47,612 people in homes, businesses, industries and schools. The BPU now manages 16,792 active meter connections that carry the water to all its customers. The total number of gallons of water produced in 2014 was 1,911,808,000 with 1,164,060,788 gallons delivered to customers. Our highest single production day was 4/27/14 at 6.96 million gallons. An additional 385,521,863gallons (20.2% of daily pumpage) was unbilled due to flushing, repaired leaks, fire fighting, bulk water sales, treatment plant use and street cleaning; leaving 362,225,349 gallons lost and unaccounted for (18.95%) in meter under registration, unknown use and hidden leaks. The average daily production of raw water treated and pumped into the distribution system was 5.24 million gallons. In 2014, water customers in Jamestown were charged $1.94 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.

TABLE OF DETECTED CONTAMINANTS

Contaminant	Violation	Date of Sample	Level Detected (Avg./Range)	Units	Regulatory Limit (MCL, TT or AL)	Regulatory Goal (MCLG)
INORGANICS NITRATE-NITRITE						
Nitrate	No	11/14/14	0.87/.266-1.48	mg/l	10 mg/l	10mg/l
Likely Source: Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits						
INORGANIC CONTAMINANTS						
Fluoride	No	Monthly	0.87/0.62-1.2	mg/l	2.2 mg/l	N/A
Likely Source: Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories						
Chlorine	No	Monthly	0.98/0.2-2.15	mg/l	4.0 mg/(MRDL)	N/A
Likely Source: Water additive used to control microbes						
Gross Alpha	No	8/8/2013	4.68	pCi/L	MCL=15	MCL=0
Likely Source: Decay of natural deposits						
Gross Beta	No	8/8/2013	2.67	pCi/L	4	0
Likely Source: Decay of natural deposits						
Radium 226	No	8/8/2013	0.26	pCi/L	5	0
Likely Source: Decay of natural deposits						
Radium 228	No	8/8/2013	1.03	p/Ci/L	5	0
Likely Source: Erosion of natural deposits						
Barium	No	11/14/14	0.36/0.29-0.42	ug/l	2mg/l	N/A
Likely Source: Discharge of drilling waste; discharge from metal refineries; erosion of natural deposits						
Cadmium	No	11/14/14	0.065/ND-0.13	ug/l	MCL=5ug/l	N/A
Likely Source: Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; Run-off from waste batteries and paints.						

TABLE OF DETECTED CONTAMINANTS

Contaminate	Violation	Date of Sample	Level Detected (Avg./Range)	Units	Regulatory Limit (MCL, TT,AL)	Regulatory Goal (MCLG)
SECONDARY INORGANICS						
Chloride	No	2/2/09	45/30-60	mg/l	250 mg/l (MCL)	N/A
	Likely source: Natural occurring or indicative of road salt contamination					
Sulfate	No	9/30/11	16.7/16.3-17.0	mg/l	250 mg/l (MCL)	N/A
	Likely source: Naturally occurring					
Copper	No	6/11-7/1/14	0.19/ND-0490 [1]	mg/l	1.3 mg/l (AL)	1.3
	Likely source: Corrosion of household plumbing systems; erosion of natural deposits; leading from wood preservatives					
Zinc	No	2/2/09	28/ND-57	ug/l	5000 ug/l (MCL)	N/A
	Likely source: Naturally occurring; mine waste					
Lead	No	6/11-7/1/14	2.7/ND-8.70[2]	ug/l	15.0 ug/l (AL)	0
	Likely source: Corrosion of house hold plumbing systems; erosion of natural deposits					
Manganese	No	7/27/ 00	11.5/6.0-17.0	ug/l	300 ug/l (MCL)	N/A
	Likely source: Naturally occurring; indicative of landfill contamination					
Sodium	No	9/18/08	17.7/14.6-20.8[3]	mg/l	N/A	N/A
	Likely source: Naturally occurring; road salt; water softeners; animal waste					
Total Trihalomethanes						
	No	Quarterly	15.07	ug/l	80 ug/l (MCL)	N/A
	Likely source: By-products of drinking water chlorination needed to kill harmful organisms; TTHMs are formed when source water contains large amounts of organic matter					
Total Haloacetic Acid						
	No	Quarterly	1.79	ug/l	100 ug/l (MCL)	N/A
	Likely source: By-products of drinking water chlorination needed to kill harmful organisms; THAAs are formed when source water contains large amounts of organic matter					
Arsenic	No	11/14/14	1.25/ND-.2.50	ug/l	10 ug/l (MCL)	N/A
	Likely source: Naturally occurring					

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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. The action level for lead was not exceeded at any of the sites tested.
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?

We have learned through our testing that some contaminates have been detected; however, these contaminates were detected well below the levels allowed by the State Health Department.

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

We are required to monitor your drinking water for specific contaminants on a regular basis. Results from regular monitoring are an indicator of whether or not your drinking water meets health standards. As you can see from the chart above, the BPU had no water quality (MCL) violations during 2014, however we did incur a monitoring violation for V.O.C. (Volatile Organic Compounds). These tests should have been taken during November and ours were taken on February 26, 2015, 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 water samples were tested in February and tested levels were undetectable for all 55 compounds for which we tested.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

Although our drinking water met or exceeded state and federal regulations, some people may be more vulnerable to disease causing microorganisms or pathogens in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

INFORMATION FOR NON-ENGLISH SPEAKING RESIDENTS: **Spanish** Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien**. French** Ce rapport contient des informations importantes sur votre eau potable. Traduisez-le ou parlez en avec quelqu'un qui le comprend bien.

SYSTEM IMPROVEMENTS: In 2014, we replaced 3,121 feet of water main. This included 6" ductile iron replaced on Camp between May & Hebner (600'); 550' on E. Pearl in Falconer from West to Central; 500' on Pennsylvania; & 70' on Bush that was replaced with 4" cast iron. We replaced 900' of 8" ductile iron on Anderson from Willard to Crestline; 200' of 2" iron replaced with plastic on Central Ave., WE; 120' of 1" iron was replaced with 1" copper on Appleyard Place. All connecting cross streets north and south of W 5th St from Washington to Monroe were replaced during a reconstruction project of W. 5th St.; this included 140' of 6" ductile and 41' of 10" ductile pipe.

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.

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.

4/10/15