

## SAMPLING RESULTS

During the past year our staff has collected hundreds of water samples in order to determine the presence of any biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES							
SUBSTANCE (unit of measure)	YEAR SAMPLED	MCL	MCLG	AMOUNT DETECTED	RANGE (LOW-HIGH)	VIOLATION	TYPICAL SOURCE
Turbidity (ntu)	2016	5.0	n/a	0.16	0.09-0.29	No	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for bacteria growth.
Coliform (%)	2016	5%	0	0	n/a	No	Bacteria which are naturally present in the environment and are used as an indicator that other, potentially-harmful bacteria may be present
Fluoride (ppm)	2016	4.0	4.0	0.83	0.61-0.83	No	Additive to prevent tooth decay and increase bone density
Chloramine residual (ppm)	2016	4.0	4.0	1.72	0.00-2.93	No	Used for the disinfection of drinking water
Arsenic (ppb)	2016	10.0	0.0	<0.002	n/a	No	Erosion of natural deposits. Runoff from orchards, glass and electronics production waste
Barium (ppm)	2016	2.0	2.0	<0.010	n/a	No	Discharge of drilling waste and metal refineries. Erosion of natural deposits.
Nitrate (ppm)	2016	10.0	10.0	<1.0	n/a	No	Runoff from fertilizer use. Leaching from septic tanks, sewage. Erosion of natural deposits.
Total Trihalomethanes (ppb)	2016	80.0	0.0	60	32.7 – 74.7	No	A group of chemicals that are formed along with other disinfection byproducts when chlorine or other disinfectants used to control microbial contaminants in drinking water react with naturally occurring organic and inorganic matter in water
Haloacetic Acids (ppb)	2016	60.0	0.0	55	24 - 64	No	
Radium-228 (pCi/L)	2012	5.0	0.0	0.7	n/a	No	Occurs at very low levels in virtually all rock, soil, water, plants, and animals.
Tap water samples were collected for the lead and copper analysis from sample sites throughout the community							
SUBSTANCE (unit of measure)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED	SITES ABOVE THE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2014-2016	1.3	1.3	0.066	0/10	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)**	2014-2016	15.0	0.0	7.0	1/10	No	

\*\*If present, elevated levels of lead can cause serious health problems, especially for pregnant woman and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Berwick Water Dept. is responsible for providing high quality drinking water, but cannot control the variety of material 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 it 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 [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead)

## THERE WHEN YOU NEED US

The Town of Berwick is proud to present its 2016 Annual Water Quality Report. This report reflects that the quality of Berwick's town water meets or exceeds all federal and state health safety requirements.

The Berwick Water Dept. provided 64 million gallons of treated water in 2016 to almost 1,000 connections. Water is delivered to you through roughly 15.5 miles of mains. Some of the connections are businesses and public facilities but the great majority are homes. We are able to meet peak demand and maintain an adequate supply of water for firefighting and other emergencies by using the 1.1-million-gallon storage tank on Pine Hill along with the 133 fire hydrants located within our distribution system.

Each day our state-licensed water treatment plant operators monitor and maintain the quality of the water we produce. In addition, we conduct regular testing of the water using state-certified laboratories such as Nelson Analytical, in Kennebunk, Maine.

This report summarizes the results of our testing conducted between January 1, 2016 and December 31, 2016.

## IMPORTANT HEALTH INFORMATION

The presence of contaminants does not necessarily indicate that water poses a health risk. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. These may include organic chemical, microbiological, and inorganic chemical contaminants, as well as pesticides, herbicides, and/or radioactive contaminants.

Some people may be more vulnerable to contaminants 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 about drinking water from their health care providers.

EPA/Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants, and information about contaminants and potential health effects are available by calling the **Safe Drinking Water Hotline at (800) 426-4791**.

## DEFINITIONS:

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

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

**MCL (Maximum Contaminant Level):** The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

**MRDLG (Maximum Residual Disinfectant Level Goal):** The level of a drinking water disinfectant below which there is no known or expected risks to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**MRDL (Maximum Residual Disinfectant Level):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for the control of microbial contaminants.

**NTU (Nephelometric Turbidity Units):** A measure of the clarity of the water and suspended particles.

**ppm (parts per million):** One part substance per million parts of water or 0.0001%

**ppb (parts per billion):** One part substance per billion parts water or 0.00001%

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

**pCi/L (picocuries per liter):** A unit of radioactivity, equal to the amount of radioactive decay of an isotope

## THE SAFE DRINKING WATER ACT

The Safe Drinking Water Act directs the Federal Environmental Protection Agency (EPA) and the State of Maine to establish and enforce limits on certain substances sometimes found in drinking water.

**Total Coliform Bacteria:** Reported as the highest monthly number of positive samples, for water systems that take less than 40 samples

**Fluoride:** For those systems that fluoridate, fluoride levels must be maintained between 0.5 to 1.2 ppm. The optimum level is 0.7ppm

**Lead/Copper:** Action Levels are measured at consumers tap. 90% of the tests must be equal to or below the action level

**Nitrate:** Nitrate in drinking water at levels above 10ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

**Gross Alpha:** Action level over 5 pCi/L requires testing for Radium 226 and 228. Action Level over 15 pCi/L requires testing for Uranium. Compliance is based of Gross Alpha results minus Uranium results =Net Gross Alpha.

**Radon:** The State of Maine adopted a Maximum Exposure Guideline for radon in drinking water at 4000 pCi/L, effective 1/1/07. If radon exceeds the MEG in water, treatment is recommended. It is also advisable to test indoor air for Radon.

**TTHM/HAA5:** Total Trihalomethanes and Haloacetic Acids (TTHM and HAA5) are formed as a byproduct of drinking water chlorination. This chemical reaction occurs when chlorine combines with naturally occurring organic matter in water. Compliance is based on running annual average.

## Severe Drought = High Manganese

August 2016 brought record low flow to the Salmon Falls River, and turned our water source into something close to a stagnant pond. Warm, stationary water becomes oxygen-poor, and then starts to dissolve manganese from the river bottom. When our normal operations drew the high level of manganese into the plant, we had no option but to pump it out to the town. Since that time, we have spent \$40,000 on equipment and engineering to install a year-round system to remove manganese from the river water.



### WHERE YOUR WATER COMES FROM

The Berwick water treatment facility draws water from the Salmon Falls River. This water is more difficult to treat than water coming from a lake or pond because color and suspended materials in the river can rise to high levels in a short amount of time, especially after a heavy rain. The river water also contains potentially harmful microscopic life forms, typical with surface water, which must be destroyed by disinfection before it is safe to drink.

The Maine Drinking Water Program (MDWP) evaluated the Salmon Falls River as part of its statewide Source Water Assessment Program (SWAP) in March of 2003. The purpose of this evaluation is to assess the susceptibility of our source water to future contamination, with the long-term goal of protecting the water supply source. The assessment, using water quality data provided by the Berwick Water Dept., physical characteristics, general land use, and development patterns within the watershed, as well as taking into account specific activities such as recreation, chemical handling or the potential release of pathogens, SWAP looks for trends that could degrade the quality of our source water.

Based on the mixture of uses in the watershed, water quality data, the fluctuations reported by the Water Department, the lack of protective ownership and zoning controls, the current susceptibility of the Berwick Water Dept.'s source water, the Salmon Falls River, is considered to be **moderate**. The MDWP determined that the conditions presenting the most recognizable threat to the water supply were high-intensity agricultural land uses upstream and the presence of a railroad corridor along the shoreline. For more information, or a complete copy of the report, contact the Drinking Water Program at (207) 287-2070.

In order to mitigate the potential for adverse conditions in our watershed, the Berwick Water Department applied for and received a \$10,000 Source Water Protection grant in 2014. The grant was used to survey conditions along the river upstream from Berwick and compare the Maine and New Hampshire laws that affect the watershed; and implement practical steps to improve the quality of the Salmon Falls water.

### OUR TEAM

**Chris Weismann**, Department Head,  
Chief Operator, Level IV, since 1996

**Tyler Nodden**, Operator, Level IV, since 2006

**Starr Glenn**, Operator, Level III, since 2011

### CONTACT INFORMATION

#### Billing and Correspondence Address:

11 Sullivan Street  
Berwick Maine 03901  
(207) 698-1101 x124

#### Treatment Plant Location (deliveries, testing, leaks, repairs, distribution):

150 Rochester Street  
Berwick Maine 03901  
(207)698-1231

#### Web Sites:

[www.berwickwater.org](http://www.berwickwater.org)

#### General E-mail:

[berwickwater@gmail.com](mailto:berwickwater@gmail.com)

### FIND US ON FACEBOOK!

### QUESTIONS?

The Berwick Water Department welcomes participation and feedback from the public. Let us know if you are having any problems with the water. If you know of any source of contamination of the Salmon Falls River, if you are interested in the process we use to make the river drinkable, or would like more information about this report, or for any other questions relating to your drinking water, please contact Chris Weismann, Chief Operator, at (207) 698-1231, or e-mail your question to [berwickwater@gmail.com](mailto:berwickwater@gmail.com).

Water quality data for community water systems throughout the United States are available at [www.waterdata.com](http://www.waterdata.com).

You can read this report at [www.berwickwater.org](http://www.berwickwater.org). You may also direct questions to the Maine Department of Human Services Drinking Water Program by calling (207) 287-2070, or the Environmental Protection Agency's State Drinking Water Hotline by calling (800)426-4791.

Ultimate authority for Water Department policy decisions rests with Berwick's Board of Selectmen. Regular meetings of the Board are held on the 1st and 3rd Tuesdays of the month at 6:30 P.M. at the Berwick town hall. Public input is always welcome. To attend, check with the Town Hall at (207) 698-1101 to find out when the next meeting is scheduled. Water Department billing and payment records are handled at the Town Hall during its normal business hours.