

# *2019 Annual Drinking Water Quality Report*

## **North Berwick Water District**

North Berwick, Maine  
PWSID ME0091120

We're pleased to present to you our Annual Drinking Water Quality Report, also known as the Consumer Confidence Report. This report, a requirement of the 1996 amendments to the Safe Drinking Water Act, is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with 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 protect our water resources. We are committed to ensuring the quality of your water.

### **WATER SOURCE**

We draw our water from a series of three gravel-packed wells located on 210 protected acres of District owned property. Wells #1 and #2, both drilled in 1984, are located next to the pump station. Well #3, drilled in 1993, is located on Morrill's Mill Rd. about ¼ mile west of Route 4. Water from all three wells is treated with chlorine to protect from possible bacteriological contamination and Well #3 passes through a pressure sand filter for iron removal. After treatment, our water is either pumped to our 500,000-gallon storage tank or through the distribution system to our 1,343 customers.

### **SOURCE WATER ASSESSMENT**

The Maine Drinking Water Program (DWP) has evaluated all public water supplies as part of the Source Water Assessment Program (SWAP). The assessments included geology, hydrology, land uses, water testing information, and the extent of land ownership or protection by local ordinance to see how likely our drinking water source is to being contaminated by human activities in the future. Assessment results are available at public water suppliers, town offices, and the DWP. For more information about the SWAP, please contact the DWP at telephone 207-287-2070.

If you have any questions about this report or concerning your water system, please contact Michael Gaudette at telephone number 207-676-3707 or mailing address P.O. Box 205, North Berwick, ME 03906. We want our valued customers to be informed about their water system. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the second and fourth Wednesdays, 6 p.m., at the District Office on 503 High Street.

### **WATER QUALITY**

North Berwick Water District routinely monitors for contaminants in your drinking water according to Federal and State laws. The following table shows any detection resulting from our monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2019.

In 2017, due to efforts to protect the water supply, our system was granted a 'Synthetic Organics Waiver.' This is a three year exemption from the monitoring/reporting requirements for the following industrial chemical(s): herbicides, carbamate pesticides, toxaphene/chlordane/PCB and semivolatile organics. This waiver was granted due to the absence of these potential sources of contamination within a half mile radius of the water source.

The sources of drinking water include rivers, lakes, ponds and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material and can pick up substances resulting from human or animal activity. All sources of drinking water are subject to potential contamination by substances that are naturally occurring or man-made. Contaminants that may be present in source water include:

**Microbial contaminants**, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

**Inorganic contaminants**, such as salts and metals, can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

**Pesticides and herbicides** may come from a variety of sources such as agriculture, urban storm water runoff, and residential

uses.

**Organic chemical contaminants**, including synthetic and volatile organic chemicals, are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

**Radioactive contaminants** can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, U.S. Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

The table below lists all of the drinking water contaminants that were detected throughout water quality monitoring and testing. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk.

<b>TEST RESULTS</b>					
Unless otherwise noted, testing was done in 2019.					
<b>Contaminant</b>	<b>Level Detected</b>	<b>Unit Measurement</b>	<b>MCLG</b>	<b>MCL</b>	<b>Likely Source of Contamination</b>
<b>Microbiological Contaminants</b>					
Total Coliform Bacteria (November 2019)	<b>3 positive</b>	Highest monthly # of positive samples	0 positive	1 pos/mo or 5% (e.coli)	Naturally present in the environment.
E Coli (November 2019)	<b>2 positive</b>	Highest monthly # of positive samples	0 positive	1 positive	Human and animal fecal waste.
<b>Radioactive Contaminants</b>					
Radon (6/5/19)	<b>1270</b>	pCi/L	4,000	4,000	Erosion of natural deposits.
<b>Inorganic Contaminants</b>					
Chromium (12/6/17)	<b>1</b>	ppb	100	100	Discharge from steel and pulp mills. Erosion of natural deposits.
Copper* (1/1/17-12/31/19)	<b>0.18</b>	ppm	1.3	AL=1.3	Corrosion of household plumbing systems.
Lead* (1/1/17-12/31/19)	<b>2</b>	ppb	0	AL=15	Corrosion of household plumbing systems.
* = Reported results are the 90 <sup>th</sup> percentile value (the value that 90% of all samples are less than).					

**Note:** The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Not all contaminants are tested for every year due to monitoring waivers and therefore we must use the most recent round of sampling. Some of our data is more than one year old, however, is limited to no older than 5 years.

**Definitions:**

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

**Locational Running Annual Average (LRAA)** - A 12 month rolling average of all monthly or quarterly samples at specific sampling locations. Calculation of the RAA may contain data from the previous year.

**Maximum Contaminant Level (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 (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 Disinfection 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 Disinfection 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 contaminants.

**Not Applicable (N/A)** - Does not apply

**Running Annual Average (RAA)** – A 12 month rolling average of all monthly or quarterly samples at all locations. Calculations of the RAA may contain data from the previous year.

**Treatment Technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water (e.g. treatment technique for turbidity).

**Variations, Exemptions, and Waivers** - State or EPA permission not to meet an MCL, a treatment technique or test for a given contaminant under certain conditions.

**Units:**

ppm = parts per million or milligrams per liter (mg/L).

pCi/L = picocuries per liter (a measure of radioactivity).

ppb = parts per billion or micrograms per liter (µg/L).

pos = positive samples.

MFL = million fibers per liter

**Notes:**

**Arsenic** - While your drinking water may meet EPA's standard for Arsenic, if it contains between 5 to 10 ppb you should know that the standard balances the current understanding of arsenic's possible health effects against the costs of removing it from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage

and circulatory problems. Quarterly compliance is based on running annual average.

**E. Coli** - E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely-compromised immune systems.

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

**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 on Gross Alpha results minus Uranium results = Net Gross Alpha.

**Lead/Copper** - Action levels (AL) are measured at consumer's tap. 90% of the tests must be equal to or below the action level.

**Nitrate** - Nitrate in drinking water at levels above 10 ppm 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 provider.

**Radon** - The State of Maine adopted a Maximum Exposure Guideline (MEG) 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.

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

**TTHM/HAA5** - Total Trihalomethanes and Haloacetic Acids (TTHM and HAA5) are formed as a by-product 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.

## IMPORTANT INFORMATION

Since our system chlorinates its water, we are required to report our annual average for chlorine residual.

**Chlorine Residual** was found to be **0.08 ppm**, with a range of 0.05 ppm to 0.13 ppm.

## VIOLATIONS

Violation Period	Violation Type
11/1/19-11/30/19	1A Violation – MCL, E.COLI, POS E COLI (RTCR) E. COLI
01/1/19-12/31/19	27 Violation – MONITORING, ROUTINE (DBP), MAJOR TTHM/HAA5-STAGE 2 DIST SYS

**E. Coli MCL Acute Violation:** In 2019, our water system tested positive and recheck sample(s) were positive for the presence of fecal coliform and/or E. Coli bacteria. A "Boil Water Order" was immediately issued. Public notification was posted or distributed to all concerned residents. To resolve this problem we increased the chlorine residual in the system and after investigating, it was determined that the positive test was from a single internal faucet. The faucet was replaced and retested and another test at a different spot within the building came back negative. At no time was the water system compromised and the backflow device was working properly. Fecal coliform and E. Coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Germs in these wastes can cause diarrhea, cramps, nausea, headaches, or fatigue. Subsequent tests have been negative for fecal coliform and E. Coli bacteria.

We are required to monitor our drinking water for specific contaminants on a regular basis. Results of regular monitoring indicate whether or not our drinking water meets health standards. During 2019, we did not test for, or failed to collect all necessary tests for Total Trihalomethanes (TTHM) and/or Haloacetic Acids (HAA5), OR our results were not reported to the DWP on time (indicated as a Reporting violation above).

## Total Coliform Bacteria Level Assessments

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. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

A Level 1 Assessment is an investigation of the water system designed to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system. During the past year, we triggered Level One assessment(s) that was/were escalated to a Level Two assessment (see below).

A Level 2 Assessment is a more detailed investigation of the water system designed to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred or why our water system continues to show total coliform bacteria on multiple occasions even after completing a Level 1 Assessment. During the past year, we were required to conduct 1 Level Two assessment(s). We completed 1 Level Two assessment(s). Based on the assessment(s), we were required to take 2 corrective actions and we completed 2 of these actions.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

For most people, the health benefits of drinking plenty of water outweigh any possible health risk from these contaminants. However, 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/Center of Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791) or at <https://www.epa.gov/ccr/forms/contact-us-about-consumer-confidence-reports>.

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. We are 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 thirty (30) seconds to two (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>.

We, at North Berwick Water District, work hard to provide top quality water to every tap. We ask that all our customers help us protect and preserve our drinking water resources, which are the heart of our community, our way of life, and our children's future. Please contact us with any questions. Thank you for working together for safe drinking water.