2025 Annual Water Quality Report

This report is the Belfast Water District's twenty-eighth Annual Water Quality Report serving Belfast and provides essential information about your drinking water. We know that you count on us for a safe and reliable water supply every day and our dedication to our customers is to provide the highest quality of service at a great value.

WATER SOURCE

The Belfast Water District uses groundwater as its water source. Two gravel-packed wells located in the Goose River Aquifer in Swanville and Belfast are protected by the Aquifer/Watershed Overlay District Ordinance adopted by the City of Belfast in 1990. These wells have been in production since the 1950's and provide a reliable supply source.

WATER TREATMENT

This water utility uses three treatment techniques to ensure water quality. They include Sodium Hydroxide for corrosion control, Fluoride for the reduction of tooth decay, and Sodium Hypochlorite for disinfection.

- **Sodium Hydroxide**, for the control of Lead and Copper. Maintaining the proper pH with the addition of sodium hydroxide, 25% solution in the water, protects our distribution system and your home's plumbing system from the effects of lead and copper. The Federal EPA Standard for Lead is 15 ppb or less, and copper is 1.3 ppm or less. This treatment has been so effective that our annual monitoring program for lead and copper levels has been reduced to once every three years under EPA guidelines. In August 2023, Belfast Water tested 20 sites in the distribution system. Results: Lead – 2.96 ppb and copper – 0.23 ppm. (0 sites failed out of the 20 tested). **Our next testing will be in the summer of 2026.**
- **Sodium Fluoride**, Fluoridation was authorized by referendum ballot on March 14, 1960, by the citizens of Belfast to reduce tooth decay. The Belfast Water District adds Sodium Fluoride to the water at the EPA-recommended rate of 0.70 mg/l.
- **Sodium Hypochlorite** is added to ensure adequate water disinfection before delivery to you. Per EPA guidelines, Belfast Water has a disinfection level between 0.20 mg/l – 0.40 mg/l in the entire system. Monthly bacteria samples are taken at six sites in the water system, and test results are reported to the Maine Drinking Water Program. Of the 72 samples taken in 2025, 0 failed.

MONITORING AND TESTING

Belfast Water District has four Maine State licensed operators that monitor and test your water. Analyzers continuously monitor the treatment levels at both wells, and SCADA records all information. The operators are notified immediately by the SCADA of any variances and immediately respond to correct them. These operators also perform backup tests of the water daily and weekly.

SOURCE WATER ASSESSMENT

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. 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 the Belfast Water

District's business office, or call the Maine DWP at 287-2070. Our wells are rated as a moderate risk because they are gravel-packed wells installed in a surficial aquifer. The current land use around our wells results in a low risk for bacteria and nitrates and a low to moderate risk for long-term, chronic contaminants. Both wells are isolated from most sources of potential contamination. Our extensive property ownership and wellhead protection program, including a local ordinance, indicate a low future risk for bacterial contamination and a low to moderate risk for chronic contaminants. These are essential features in providing long-term protection. We will continue to work with the City of Belfast to maintain and support these programs.

HEALTH INFORMATION

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 water poses a health risk. Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and can also come from gas stations, urban runoff, and septic systems.
- Radioactive Contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those 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/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline 1-800-426-4791 or https://www.epa.gov/ccr/forms/contact-us-about-consumer-confidence-reports

LEAD and COPPER

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. Belfast Water District is responsible for providing high quality drinking water and removing lead pipes (of which our infrastructure does not have any lead pipes), but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water. If you are concerned about lead in your water, you may wish to have your water tested, contact us. 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 the following link: http://www.epa.gov/safewater/lead

The Belfast Water District completed a Lead Service Line Inventory (LSLI) as required by the Revised Lead and Copper Rule. After completing the survey, no lead or galvanized requiring replacement services were found. The Certification Notice is publicly accessible at: http://www.belfastwater.org/LeadServiceLineInventorySurvey2024.pdf To view a hard copy of the survey results, please visit our office at 41 Wight Street.

DEFINITIONS:

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

LRAA - Locational Running Annual Average: 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.

MCL - Maximum Contaminant Level: 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.

MCLG - Maximum Contaminant Level Goal: 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.

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 control of microbial contaminants.

MRDLG - Maximum Residual Disinfectant Level Goal: 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.

RAA - Running Annual Average: A 12-month rolling average of all monthly or quarterly samples at all locations. Calculation of the RAA may contain data from the previous year.

SMCL - Secondary Maximum Contaminant Level: Non-mandatory water quality standards.

TT - Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

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).
ppt = parts per trillion or nanograms per liter (ng/L).
pos = positive samples.
MFL = million fibers per liter

WATER TEST RESULTS – PRIMARY STANDARDS

CONTAMINANT	DATE	RESULTS	RANGE	MCL	MCLG	SOURCE
Microbiological						
COLIFORM (TCR) (9)	2025	0 pos		1 pos/mo. or 5%	0 pos	Naturally present in the environment.
Inorganics						
ARSENIC (1)	4/11/2023	0.58 ppb		10 ppb	0 ppb	Erosion of natural deposits. Runoff from orchards, glass, and electronics productions wastes.
BARIUM	4/11/2023	0.0065 ppm		2 ppm	2 ppm	Discharge of drilling wastes and from metal refineries. Erosion of natural deposits.
FLUORIDE (3)	3/6/2025	0.79 ppm	0.5 – 1.2 ppm	4 ppm	4 ppm	Erosion of natural deposits. Water additive which promotes strong teeth. Discharge from fertilizer and aluminum factories.
NITRATE (6)	3/19/2025	1.58 ppm		10 ppm	10 ppm	Runoff from fertilizer use. Leaching from septic tanks, sewage. Erosion of natural deposits.
Radionuclides						
COMBINED RADIUM (-226 & -228)	10/20/2020	2.54 pCi/l		5 pCi/l	0 pCi/l	Erosion of natural deposits.
COMBINED URANIUM	4/11/2023	0.86 ppb		30 ppb	0 ppb	Erosion of natural deposits.
RADIUM-226	10/20/2020	0.932 pCi/l		5 pCi/l	0 pCi/l	Erosion of natural deposits.
RADIUM-228	10/20/2020	1.61 pCi/l		5 pCi/l	0 pCi/l	Erosion of natural deposits.
Disinfectants & Disinfection Byproducts **DISTRIBUTION SYSTEM**						
TOTAL HALOACETIC ACIDS (HAA5) (10)	8/18/2025	0 ppb		60 ppb	0 ppb	By-product of drinking water chlorination.
TOTAL TRIHALOMETHANE (TTHM) (10)	8/18/2025	6.2 ppb		80 ppb	0 ppb	By-product of drinking water chlorination.
Lead/Copper						
COPPER 90TH% VALUE (5)	2021-2023	0.23 ppm	0.00897-0.421 ppm	AL = 1.3 ppm	1.3 ppm	Corrosion of household plumbing systems.
LEAD 90TH% VALUE (5)	2021-2023	2.96 ppb	0-4.51ppb	AL = 15 ppb	0 ppb	Corrosion of household plumbing systems.
Number of sampling sites exceeding the action level: **0**	Complete lead tap sampling data are available upon request.					
Chlorine Residual						
CHLORINE RESIDUAL	2025	.44 ppm AVG.	0.20 – 0.40	MRDL=4 ppm	MRDLG=4ppm	By-product of drinking water chlorination.

NOTES:

1) **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 **RAA**.
2) **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.
3) **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.
4) **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.
5) **Lead/Copper**: Action levels (AL) are measured at consumer's tap. 90% of the tests must be equal to or below the action level.
6) **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.
7) **PFAS**: The degree of risk depends on the level of chemicals and duration of exposure. Laboratory studies of animals exposed to high doses of PFAS have shown numerous negative effects such as issues with reproduction, growth and development, thyroid function, immune system, neurology, as well as injury to the liver. Research is still relatively new, and more needs to be done to fully assess exposure effects on the human body.
8) **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.
9) **Total Coliform Bacteria**: Reported as the highest monthly number of positive samples, for water systems that take less than 40 samples per month.
10) **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 **LRAA**.
11) **Turbidity**: Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity 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.

All other regulated drinking water contaminants were below detection levels.

SECONDARY STANDARDS

Secondary standards are the non-regulated parameters monitored for aesthetic concerns and do not present a health risk. Secondary contaminants that were detected are listed in this table.

SECONDARY STANDARDS WATER TEST RESULTS

CONTAMINANT	RESULT (ppm)	DATE
IRON	0.11	4/11/2023
ZINC	0.0014	4/11/2023
SULFATE	7	4/11/2023
SODIUM	21	4/11/2023
MANGANESE	0.11	4/11/2023
CHLORIDE	20	4/11/2023
MAGNESIUM	4.2	4/11/2023

UNREGULATED CONTAMINANTS MONITORING

Unregulated contaminants are those for which U.S. EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of these contaminants in drinking water and whether future regulation is warranted. In 2023, we participated in the fifth round of the Unregulated Contaminant Monitoring Rule (UCMR 5). We had the following detections for contaminants in this round of testing. *Results →→→*

2024 UCMR 5 WATER TEST RESULTS		
Contaminant	**Avg Level Found (ppt)**	**Range of Detections (ppt)**
PFBA	6.2	5.7-6.7
PFHxA	8.3	5.9-10.7
PFPeA	4.4	3.3-5.5

VIOLATIONS

No Violations in 2025

WAIVER INFORMATION

For the time period 2024-2026, 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). **ENDOTHALL**. This waiver was granted due to the absence of these potential sources of contamination within a half mile radius of the water source(s).

ABOUT YOUR WATER SUPPLY

Your water supply and distribution system include over 39 miles of water mains. The system has 2,120 services serving 5,300 customers in 2025 and provides fire protection service through 261 hydrants. We have produced and delivered over 243,752,900 gallons of water in the last twelve months. That's an average of 667,816 gallons each day. The system also maintains 3,050,000 gallons of water in our four storage tanks, allowing us to meet peak system demand periods and maintain an adequate supply during firefighting activities.

You may be interested to know that you pay less than one cent per gallon of water at the minimum rate. Water delivered to your home, you get 1 gallon for 1 cent, ten gallons for 10 cents, and 100 gallons for $1.00. This water supply has been tested for hardness 62 mg/l = 3.72 grains per gallon, considered 'moderately' hard.

This report summarized our activities during the past year. If you have any questions about your water quality, please contact us. Office hours are Monday – Friday, 7:30 a.m. – 3:30 p.m. excluding holidays. For more information, please visit us on the web at: www.belfastwater.org

CONTACT US

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BOARD OF TRUSTEES

Bruce Osgood – *Chairman*
Kenneth Colby Horne – Vice Chairman
Chad Otis, Treasurer
Jill Goodwin, Secretary/Clerk
Stephen Hall, Trustee

Board of Trustee meetings are held monthly and open to the public. For upcoming meeting date, please visit our website under the Notices tab, or at: http://www.belfastwater.org/meetingdate.htm

EMPLOYEES

Frank Short, *Superintendent*
Tammy Morse-Administrator
Suzette Harford-Accounts Manager
Lisa Redmond, Office Assistant

Plant Operations and Distribution
Hayden Bradford, Foreman
Zechariah Harriman
Ezrah Downs
David Hammond

Please share this information with anyone who drinks our water (or their guardians), especially those who may not have received this report directly (for example, people in apartments, nursing homes, schools, and businesses).