



Belfast Water District
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Belfast, Maine 04915
www.belfastwater.org
2013 Water Quality Report

INTRODUCTION

This is the sixteenth annual water quality report of the Belfast Water District serving Belfast. This annual report is intended to provide you with important information about your drinking water. We know that you count on us for a safe and reliable supply of water every day, and we are dedicated to providing the highest quality of service to you at a great value. You may be interested to know that at the minimum rate, you pay only .0065 cents per gallon of water. Delivered to your home, you get 2 gallons of water for 1 cent, ten gallons for .07 cents and 100 gallons for .65 cents. You may be interested to know that this water supply has been tested for hardness 64 mg/l = 3.7 grains which is considered 'soft'.

THE CONTENTS OF THIS REPORT

The Safe Drinking Water Act mandates the State of Maine, along with the Environmental Protection Agency (EPA), to establish and enforce minimum drinking water standards. These standards set limits on certain biological, radioactive, organic and inorganic substances sometimes found in drinking water. The limits set on these standards are known as MCLs, Maximum Contaminant Levels. Two types of standards have been established. Primary Standards set achievable levels of drinking water quality to protect your health. Secondary Standards provide guidelines regarding the taste, odor, color, and other aesthetic aspects of your drinking water which do not present a health risk. Listed in this report are the results of the System's regular testing, which provides the test results for both Primary and Secondary Standards.

The 2013 testing results indicate *Belfast Water District's system* meets all state and federal requirements. No violations occurred. Water is tested for the contaminants listed on the table. The data presented in this report are from the most recent testing done in accordance with the regulations as set forth by the Safe Drinking Water Act.

WATER QUALITY

We ensure that your water is safe through regular monitoring and testing of water quality. Maine State Health and Environmental Testing Laboratory and Maine Water Testing Laboratory conduct these tests, State certified testing laboratories. This report shows a comprehensive summary of the laboratory test results for the constituents we regularly monitor in your water supply. Responsibility for maintaining water quality resides with our staff of certified water treatment plant operators, licensed by the State of Maine Department of Human Services.

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. 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/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). MCL's (maximum contaminant levels) are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters (or about 2 quarts) of water every day at the MCL level for a lifetime to have a one in ten thousand chance of having the described health effect.

LEAD AND COPPER

The Federal Lead and Copper Rule mandates household testing for Lead and Copper. According to the rule, 90% of the samples from homes must have Lead levels less than 15 ppb and copper levels less than 1.3 ppm. 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. The Belfast Water District 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 <http://www.epa.gov/safewater/lead>.

RADON

The highest Radon levels for our system were 969 pCi/L, taken in June 2005. Radon is found in the soil and bedrock formations and is a water soluble, gaseous by-product of Uranium. Most Radon is released to the air, moments after turning on the tap. Only about 1-2 percent of Radon in the air comes from drinking water. The USEPA is considering setting lower standards for Radon in drinking water. The State of Maine adopted a Maximum Exposure Guideline (MEG) for Radon in drinking water at 4,000 pCi/l, effective 1/1/07. If Radon exceeds the MEG in water, treatment is recommended. The U. S. EPA is proposing setting federal standards for Radon in public drinking water. It is also advisable to test indoor air for Radon. Breathing Radon released to air from tap water increases the risk of lung cancer over the course of your lifetime. If you seek more information about Radon, please contact this office or the State Drinking Water Program and request a Radon 'Fact Sheet'.

TESTING WAIVER GRANTED

In 2011, our system was granted a "Synthetic Organics Waiver". This is a three year exemption from the monitoring/reporting requirements for pesticides, herbicides, fungicides, and other industrial chemicals. This waiver is granted due to the absence of these potential sources of contamination within a half mile radius of the water source.

WATER SUPPLY/SOURCE INFORMATION

The Belfast Water District uses ground water as its water source. There are two gravel packed wells located in the Goose River Aquifer in Swanville and Belfast. These wells have been in production since the 1950's and provide a reliable source of supply. The wells are protected by the Aquifer/Watershed Overlay District ordinance adopted by the City of Belfast in 1990. The original source of water for Belfast was the Little River located south of the city. Use of this supply was discontinued in the early 1980's. However, the utility realizes the importance of preserving this source and continues to protect and maintain the Little River as a backup source of supply.

To ensure the quality of your source water, the treatment techniques used by this water utility include chemical enhancement for corrosion control. Maintaining the proper pH and the addition of sodium hydroxide, 25% solution, which is a corrosion control chemical, to the water helps us maintain acceptable levels. This helps protect our distribution system and your home's plumbing system from the affects of lead and copper. 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's guidelines. Fluoride is added to prevent tooth decay. Fluoridation was authorized by referendum ballot on March 14, 1960. On January 7, 2011 the Federal Dept. of Health & Human Services (HHS) and the Federal Environmental Protection Agency (EPA) released a joint statement announcing a new scientific assessment and actions on fluoride. In this statement HHS proposed recommendation of 0.7 mg/l liter of water replaces the current recommended rate of 0.7 to 1.2 mg/l. This updated recommendation is based on recent EPA and HHS scientific assessments to balance the benefits of preventing tooth decay while limiting any unwanted health effects. The Belfast Water District has reduced the level of fluoride to an average of 0.7 in the water system in compliance with this recommendation. Also, chlorine levels are continuously monitored and controlled to ensure adequate disinfection has occurred prior to delivery to you. In addition, sodium hypochlorite 12 ½% is added to the water at a continuously monitored and controlled rate to ensure adequate disinfection of the water has occurred prior to delivery to you.

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 has completed assessments of all public water sources in Maine. Our wells are rated as 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. Land ownership and wellhead management planning indicate a low future risk for bacterial contamination and low to moderate risk for chronic contaminants. Our extensive property ownership and wellhead protection program, including a local ordinance, are important features in providing long-term protection. We will continue to work with the city to maintain and support these programs. For more information, contact the Maine Drinking Water Program at 287-2070.

WATER SYSTEM DATA

Your water supply and distribution system includes over 39 miles of water mains. The system has 1,979 services serving 4,948 customers in 2013 and provides fire protection service through 249 hydrants. In the last twelve months, we have produced and delivered over 191,728,200 gallons of water. That's an average of 525,283 gallons each day. The system also maintains 3,050,000 gallons of water in our 4 storage tanks. This storage allows us to meet peak system demand periods and maintain an adequate supply during fire fighting activities.

OTHER IMPORTANT INFORMATION

Thank you for allowing us to continue providing your family with clean, quality water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all of our customers. These improvements are sometimes reflected as rate structure adjustments. Thank you for your understanding.

This report is only a summary of our activities during the past year. If you have any questions about your water quality, the information contained in this report, or your water service in general, please call us at our **business office at (207) 338-1200 (7:00 AM to 3:30 PM) Monday thru Friday, or contact us by e-mail at info@belfastwater.org**. Board of Trustees Meetings, open to the public, are held monthly. The notice of meetings are posted on our website at www.belfastwater.org. You may also direct questions to the Maine Department of Human Services Drinking Water Program at (207) 287-2070 or the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

BOARD OF TRUSTEES

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Keith Pooler - **Superintendent**
Cynthia Clements - **Administrative Assistant**
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Plant Operations and Distribution
Frank Short, **Foreman**

Harold Dyer, Donald Hahn, Jr., Patrick Richards
**WE ARE AN EQUAL OPPORTUNITY
EMPLOYER AND PROVIDER**

Primary Drinking Water Standards

Parameter	RESULTS	RANGE LOW-HIGH	MCL	MCLG	TYPICAL SOURCE
Clarity					
Turbidity (NTU) (12) (TT)	<0.6	0.05-0.10	5.0	5.0	Soil runoff
Microbiological					
Total Coliform bacteria (cfu) (<60 samples)	0 Positive	0 (60 tests)	1 Positive	0 Positive	Naturally present in the environment
Organic Chemicals					
2,4-D (ppb)	NOT DETECTED		70	70	
Adipate (diethylhexyl) (ppb)	NOT DETECTED		400	400	
Alachlor (ppb)	NOT DETECTED		2	0	
Aldicarb (ppb)	NOT DETECTED		3	1	
Aldicarb Sulfone (ppb)	NOT DETECTED		3	1	
Aldicarb Sulfoxide (ppb)	NOT DETECTED		3	1	
Atrazine (ppb)	NOT DETECTED		3	3	
Benzene (ppb)	NOT DETECTED		5	0	
Benzo (a) Pyrene (2) (ppt)	NOT DETECTED		200	0	
Carbofuran (ppb)	NOT DETECTED		40	40	
Carbon Tetrachloride (ppb)	NOT DETECTED		5	0	
Chlordane (ppb)	NOT DETECTED		2	0	
Chlorobenzene (ppb)	NOT DETECTED		100	100	
Dalapon (ppb)	NOT DETECTED		200	200	
Di (2-ethylhexyl) adipate (ppb)	NOT DETECTED		400	0	
Di (2-ethylhexyl) phthalate (PAE) (ppb)	NOT DETECTED		6	0	
Dibromochloropropane (DBCP) (2) (ppt)	NOT DETECTED		200	0	
Dichlorobenzene (p-) (ppb)	NOT DETECTED		75	75	
Dichlorobenzene o- (Ortho-) (ppb)	NOT DETECTED		600	600	
Dichloroethane (1,2-) (ppb)	NOT DETECTED		5	0	
Dichloroethylene (1,1-) (ppb)	NOT DETECTED		7	7	
Dichloroethylene (Trans-1,2-) (ppb)	NOT DETECTED		100	100	
Dichloromethane	NOT DETECTED		5	0	
Dichloropropane (1,2-) (ppb)	NOT DETECTED		5	0	
Dinoseb (ppb)	NOT DETECTED		7	7	
Dioxin (3) (ppt)	STATE WIDE WAIVER		30	0	
Diquat (4) (ppb)	STATE WIDE WAIVER		20	20	
Endothall (4) (ppb)	NOT DETECTED		100	100	
Endrin (ppb)	NOT DETECTED		2	2	
Ethylbenzene (ppb)	NOT DETECTED		700	700	
Ethylene Dibromide (EDB) (5) (ppt)	NOT DETECTED		50	0	
Glyphosate (3) (ppb)	STATE WIDE WAIVER		700	700	
Heptachlor (ppt)	NOT DETECTED		400	0	
Heptachlor Epoxide (ppt)	NOT DETECTED		200	0	
Heptachlor/Heptachlor Epoxide (ppt)	NOT DETECTED		200	0	
Hexachlorobenzene (ppb)	NOT DETECTED		1	0	
Hexachlorocyclopentadiene (ppb)	NOT DETECTED		50	50	
Lindane (ppt)	NOT DETECTED		200	200	
Methoxychlor (ppb)	NOT DETECTED		40	40	
Methyl-Tertiary-Butyl-Ether (MTBE) (13) (ppb)	NOT DETECTED		35	35	
Oxamyl (Vydate) (ppb)	NOT DETECTED		200	200	
Pentachlorophenol (ppb)	NOT DETECTED		1	0	
Picloram (ppb)	NOT DETECTED		500	500	
Polychlorinated Biphenyls (PCBs) (ppt)	NOT DETECTED		500	0	
Silvex (2,4,5-TP) (ppb)	NOT DETECTED		50	50	
Simazine (ppb)	NOT DETECTED		4	4	
Styrene (ppb)	NOT DETECTED		100	100	

Definitions:
Running Annual Average (RAA): The Average of all monthly or quarterly samples for the last year at all sample locations.
Maximum Contaminant Level Goal (MCLG) established by EPA: The level of a contaminant in drinking water below which there is no known or expected risk to health.
Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in the drinking water. This is used to determine compliance.
Variance of Waiver: State or U.S. EPA permission not to meet MCL or treatment technique under certain conditions (e.g. waiver to filtration).
Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water (e.g. turbidity).
Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow (e.g. lead, copper).
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.
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.
Concentrations: In this report, most of the quantities are expressed as ppm, ppt, ppt and pCi/L. These are a measure of organics, inorganics or radiation activity per a fixed amount of water.
Parts per Million (ppm): Is the equivalent of one drop of chemical per every 10 gallons.
Parts per Billion (ppb): Is the equivalent of one drop of chemical per every 10,000 gallons.
Parts per Trillion (ppt): Is the equivalent of one drop of chemical per every 10,000,000 gallons.
Parts per quadrillion (ppq): Is equivalent of one drop of chemical per every 10,000,000,000,000 gallons.
Picocuries per Liter (pCi/L): Is a measure of the amount of naturally occurring radiation per liter of water.
Nephelometric Turbidity Units (NTU): Turbidity Units are the measurement of cloudiness in the water.
Colony forming units: (cfu)

Primary Drinking Water Standards

					(CONTINUED)							
Parameter	RESULTS	RANGE LOW-HIGH	MCL	MCLG	TYPICAL SOURCE	Parameter	Test Date	RESULTS	RANGE LOW-HIGH	MCL	MCLG	TYPICAL SOURCE
Organic Chemicals (continued)						Tetrachloroethylene (PCE) (ppb)		NOT DETECTED		5	0	
						Toluene (ppm)		NOT DETECTED		1	1	
						Toxaphene (ppb)		NOT DETECTED		3	0	
						Trichlorobenzene (1,2,4-) (ppb)		NOT DETECTED		70	70	
						Trichloroethane (1,1,1-) (TCA) (ppb)		NOT DETECTED		200	200	
						Trichloroethane (1,1,2-) (ppb)		NOT DETECTED		5	3	
						Trichloroethylene (TCE) (ppb)		NOT DETECTED		5	0	
						Vinyl Chloride (ppb)		NOT DETECTED		2	0	
						Xylenes (ppm)		NOT DETECTED		10	10	
Inorganic Chemicals						Antimony (ppb)	3/15/2011	NOT DETECTED		6	0	
						Arsenic (15) (ppb)	3/15/2011	0.54		10	0	Erosion of natural deposits
						Asbestos (1) (MFL)	11/12/2013	NOT DETECTED		7	7	
						Barium (ppm)	3/15/2011	0.0057		2	2	Erosion of natural deposits
						Beryllium (ppb)	3/15/2011	NOT DETECTED		4	4	
						Cadmium (ppb)	3/15/2011	NOT DETECTED		5	5	
						Chromium (Total) (ppb)	3/15/2011	1		100	100	Erosion of natural deposits
						Copper (7) (ppm) 0 sites failed out of 20 sampled	8/16/2011	0.19		AL = 1.3	AL = 1.3	Corrosion of household plumbing systems
						Cyanide(ppb)	3/15/2011	NOT DETECTED		200	200	
						Fluoride (6) (ppm)	2/20/2013	0.82		4	4	Erosion of natural deposits. Water additive which promotes strong teeth. Discharge from fertilizer and aluminum factories.
						Lead (7) (ppb) 0 sites failed out of 20 sampled	8/16/2011	9		AL = 15	0	Corrosion of household plumbing systems
						Mercury (ppb)	3/15/2011	NOT DETECTED		2	2	
						Nitrate (ppm)	4/3/2013	0.57		10	10	Runoff from fertilizer use. Leaching from septic tanks, sewerage. Erosion of natural deposits
						Nitrite (ppm)	3/3/2009	NOT DETECTED		1	1	
						Selenium (ppb)	3/15/2011	NOT DETECTED		50	50	
						Thallium (ppb)	3/15/2011	NOT DETECTED		2	0.5	
Disinfection By-Products						Total Trihalomethanes (TTHM/HAA5) (8) (ppb)	9/19/2013	7.4		80	0	By-product of chlorination
						Total Haloacetic Acids	9/19/2013	<5		60	0	By-product of chlorination
Radionuclides						Gross Alpha Screen (9) (pCi/l)	3/15/2006	1.23		15	0	Erosion of natural deposits
						Radium 226/228 (Combined) (pCi/L)	5/2/2011	0.818		5	0	Erosion of natural deposits
						Uranium (16) (ug/l)	3/15/2011	1.5		30	0	
						Radon Screen (10) (pCi/L)	6/17/2005	969		4,000	N/A	Erosion of natural deposits
Other						Cryptosporidium/Giardia (11)				0	0	
						Calcium (mg/l)	3/15/2011	23				
						Chlorine Residual (ppm)	2013	0.28	0.21-0.41	MRDL= 4.0 ppm	MRDLG=4 ppm	By-product of chlorination

Secondary Drinking Water Standards

Parameter	Test Date	RESULTS	RANGE LOW-HIGH	MCL	MCLG	TYPICAL SOURCE
Chemical Parameters (ppm)						
Chloride	3/15/2011	10 ppm	8-12	250	250	
Magnesium	3/15/2011	3 ppm				
Foaming Agents (MBAS)		N/A		0.5	0.5	
Iron	3/15/2011	less than .05		0.3	0.3	
Manganese	3/15/2011	0 ppm				
Silver	3/15/2011	less than .0010		0.1	0.1	
Sulfate	3/15/2011	5 ppm		250	250	
Total Dissolved Solids		N/A		500	500	
Zinc	3/15/2011	0.0046	.002 - .0046	5.0	5.0	
Sodium	3/15/2011	14 ppm				
Nickel	3/15/2011	0.001 ppm				
Physical Parameters						
Color (units)	3/15/2011	less 5.0		15.0	15.0	
pH	3/15/2011	7.1		6.0-8.5	6.0-8.5	

Footnotes:
(1) Asbestos - State wide waiver to testing in Maine. Only those systems with asbestos pipe need test.
(2) Dibromochloropropane - State wide waiver granted to Maine
(3) Dioxin/Glyphosate - State wide waiver granted to Maine
(4) Diquat/Endothall - Testing only required if potato growing occurs in watershed.
(5) Ethylene Dibromide - Testing only required for ground water systems. State wide waiver for surface water systems in Maine.
(6) Fluoride - Levels shall be maintained between 1 - 2 ppm for those water systems that fluoridate the water. Starting January 2011 new reduced level of 0.7 ppm will take effect.
(7) Copper/Lead action levels are measured at consumer's tap. 90% of tests in water system must be equal to or below action level
(8) Total Trihalomethanes (TTHM/HAA5): Total Trihalomethanes and Haloacetic Acids are formed as a by-product of drinking water chlorination. This chemical reaction occurs when chlorine combines with naturally occurring organic matter in water.
(9) Gross Alpha - Action level over 5pCi/l requires testing for Radium 226/228. Action level over 15pCi/l requires testing for Radon & Uranium
(10) Radon - The State of Maine adopted a Maximum Exposure Guideline (MEG) for Radon in drinking water at 4,000 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. The U.S. EPA is proposing setting federal standards for Radon in Public drinking water.
(11) Cryptosporidium, Giardia, Legionella - Surface Waters Only, Ground waters not required to test or exempt before 1999.
(12) Turbidity - Surface waters only; 1.49 NTU for Slow Sand or AFT
Turbidity (continued) 0.549 NTU for Conventional or Direct Filtration; 5.0 ntu for unfiltered surface water systems.
(13) MTBE - State of Maine MCL standard, adopted in February 1998
(14) MFL is "Million Fibers per Liter"
(15) Arsenic - The U.S. EPA adopted the new MCL standard in October 2001. Water systems must meet this new standard by January 2006.
(16) Uranium - The U.S. EPA adopted the new MCL standard of 30 ppb, in December 2000. Water systems must meet this new standard by December 2003.