Annual Summary of Drinking Water Quality Monitoring for Public Systems 2023-2024

Water Resources Management Division

Newfoundland & Labrador

Background

Clean, safe drinking water is fundamental to the health, well-being, and economic prosperity of the people and communities of Newfoundland and Labrador. Guided by the Multi-Barrier Strategic Action Plan (MBSAP), the province's Drinking Water Program provides a comprehensive, adaptive framework that ensures a high standard of public drinking water quality. Safeguarding public drinking water systems involves extensive monitoring—from source to distribution—carried out collaboratively by several government departments and partners, including Environment and Climate Change (ECC), Digital Government and Service NL (DGSNL), and NL Health Services (NL Public Health and the Public Health Microbiology Laboratory).

Building on this strong foundation, the Government of Newfoundland and Labrador remains committed to implementing the Drinking Water Safety Action Plan and advancing the principles of the MBSAP. Ongoing efforts focus on strengthening governance, infrastructure, risk management, regulatory oversight, community outreach, and research and innovation. These actions reinforce existing safeguards while addressing emerging challenges such as evolving environmental conditions, shifting public health standards, and advancements in treatment technologies.

This Annual Summary of Drinking Water Quality Monitoring for Public Systems (hereafter referred to as the "*Annual Monitoring Summary*") provides an overview of monitoring activities and water quality metrics for public drinking water systems during the 2023–2024 fiscal year. The report builds on previous years by presenting year-over-year data and insights on key performance indicators related to public drinking water quality. The Government of Newfoundland and Labrador continues to prioritize corrective measures aimed at reducing Boil Water Advisories (BWAs) and addressing Non-consumption Advisories (NCAs). These ongoing efforts help protect community health and maintain public confidence in the safety and reliability of the province's water supply.

CLICK HERE

If you would like to learn more about the 2023 Drinking Water Safety Action Plan.

https://www.gov.nl.ca/ecc/files/23074-Drinking-Water-Safety-Plan-April-10.pdf

Bacteriological Water Quality

Environmental Health Officers and Environmental Technicians with the Department of Digital Government and Service NL collect tap water samples from public drinking water systems for analysis of bacteriological parameters (total coliforms and Escherichia coli). These samples are analyzed through the NL Health Services laboratory network, which includes the Public Health Microbiology Laboratory and hospital laboratories. Figure 1 shows the total number of bacteriological samples that were collected and tested for each fiscal year since 2015-16.

During 2023-24, 18,604 public drinking water system bacteriological samples were collected and tested. Based on the analysis of bacteriological parameters for public drinking water system samples taken during the 2023-24 fiscal year, 637 samples were found to be unsatisfactory in terms of total coliforms and 102 samples were found to be unsatisfactory in terms of E. coli (Table 1). An unsatisfactory result indicates the presence of total coliforms and or E. coli bacteria counts in the sample.

Figure 1: Bacteriological Samples Tested per Fiscal Year

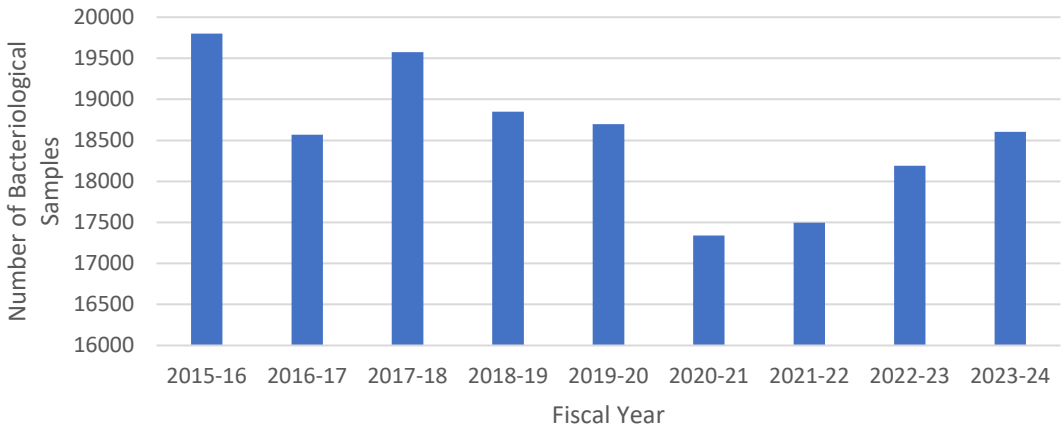


Table 1: Summary of Bacteriological Sampling for 2023-2024

Fiscal Year 2023-2024							
Number of public water system bacteriological samples for each region tested during the fiscal year:							
Labrador West	*Goose Bay*	*Grand Falls-Windsor*	*Clarenville*	*Corner Brook*	*St. Anthony*	*Public Health Lab*	*Total*
173	1,135	4,167	1,105	3,278	982	7,764	18,604
Number of samples found to be unsatisfactory in terms of total coliforms by region:							
Labrador West	*Goose Bay*	*Grand Falls-Windsor*	*Clarenville*	*Corner Brook*	*St. Anthony*	*Public Health Lab*	*Total*
3	5	178	73	123	63	192	637
Percentage (%) of public water system samples tested found to be unsatisfactory in terms of total coliforms: 3.42%							
Number samples tested found to be unsatisfactory in terms of E. coli by region:							
Labrador West	*Goose Bay*	*Grand Falls-Windsor*	*Clarenville*	*Corner Brook*	*St. Anthony*	*Public Health Lab*	*Total*
0	1	12	10	50	15	14	102
Percentage (%) of public water system samples tested found to be unsatisfactory in terms of E. coli: 0.55%							

Boil Water Advisories

Boil Water Advisories (BWAs) are preventative measures designed to protect public health from microbiological contamination that may be present, or is confirmed to be present, in drinking water.

A BWA is issued when water quality becomes questionable due to operational deficiencies, such as insufficient chlorine residuals, the absence of a disinfection system, or the presence of bacteriological indicators. In such cases, the results are immediately communicated to affected communities for appropriate action. The information is also passed along to the Medical Officers of Health to advise that action has been taken with the community, and for any follow up that may be necessary by the public health system. The list of all active BWAs is updated daily and is publicly accessible via: https://www.gov.nl.ca/ecc/waterres/drinkingwater/advisories/

On March 31, 2024, there were 184 BWAs in effect across the province. These advisories impacted 143 communities, affecting approximately 68,383 individuals—equivalent to about 15.46% of the population served by public water systems. Of these advisories, 134 were classified as long-term, having been in effect for five years or more.

Figure 2 shows a comparison of BWAs at the end of each fiscal year since March 31, 2016.

Figure 3 depicts the breakdown of BWAs issued on March 31, 2024, categorized by the underlying reasons for their issuance. As shown in the figure, only 13 (7.07%) of total boil water advisories are due to microbiological reasons.

Figure 2: Number of BWAs and Number of Communities Affected

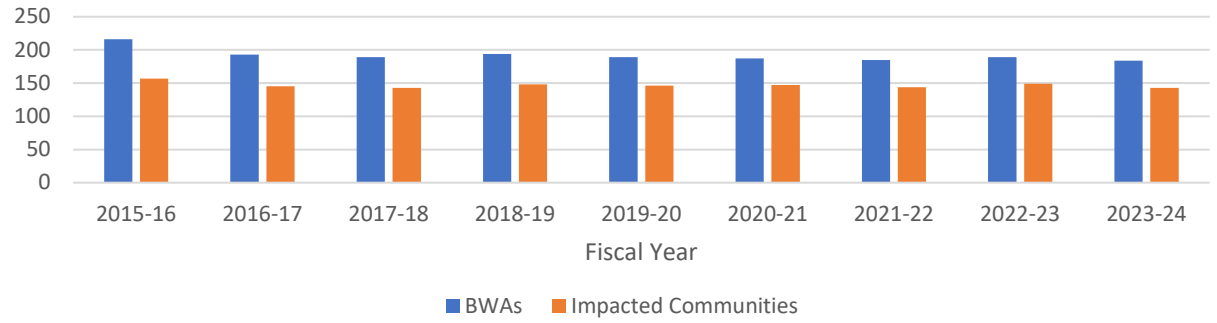
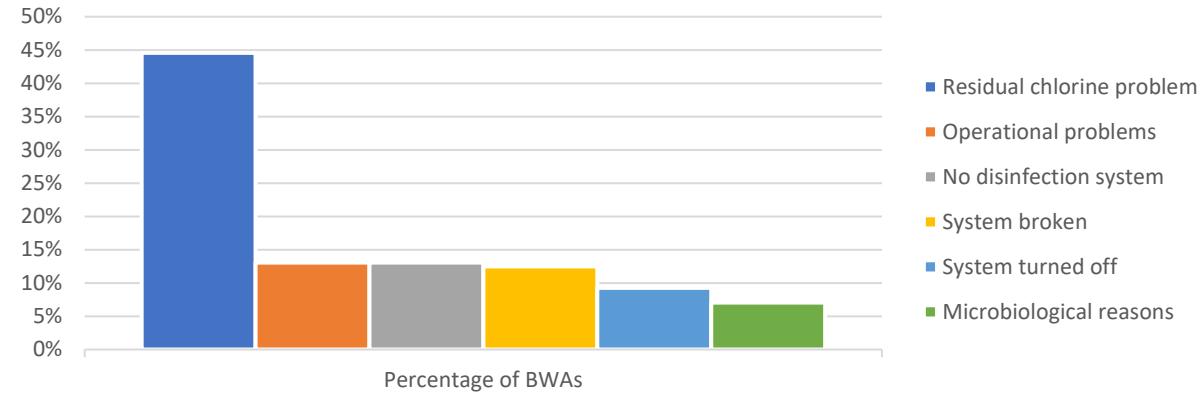


Figure 3: Reasons for BWAs



Chemical and Physical Water Quality

Staff within the Water Resources Management Division (WRMD) of the Department of Environment and Climate Change collect water samples from both source and tap locations to analyze chemical, physical, and radiological parameters. The number of chemical and physical water quality samples taken by region for 2023-24 are presented in Table 2. During 2023-24, WRMD collected a total of 3,962 samples.

Table 2: Number of Samples Taken by WRMD for 2023-24

Fiscal Year: 2023-2024					
Region	**Source**	**Tap**	**THM**	**HAA**	**Total**
Eastern	79	443	479	478	1,479
Central	58	227	344	342	971
Western	136	354	358	358	1,206
Labrador	10	68	112	112	302
Other (Special)	4	0	0	0	4

Analysis of chemical and physical parameters is conducted by an accredited laboratory, ensuring high standards of quality and competency in sample processing. Once the laboratory completes its analysis, the results are sent to the WRMD for evaluation. The WRMD assesses these results by comparing them to the drinking water quality guidelines used by the Government of Newfoundland and Labrador, which are based on the Guidelines for Canadian Drinking Water Quality (GCDWQ) developed by Health Canada. This comparison helps identify any exceedances in chemical or physical parameters that could pose risks to human health or affect the aesthetic quality of the drinking water. Table 3 provides a summary of chemical and physical parameter exceedances recorded from fiscal years 2017-18 to 2023-24.

When an exceedance is identified for a parameter that could pose a risk to human health, a detailed exceedance report is promptly issued to the affected community and shared with the Departments of Health and Community Services (HCS), NL Health Services and Digital Government and Service NL (DGSNL). Officials with these departments then consult with a Medical Officer of Health regarding the need to issue a Non-Consumption Advisory (NCA). Figure 4 provides a comparison of NCAs at the end of each fiscal year since March 31, 2016.

Figure 4: Non-Consumption Advisories

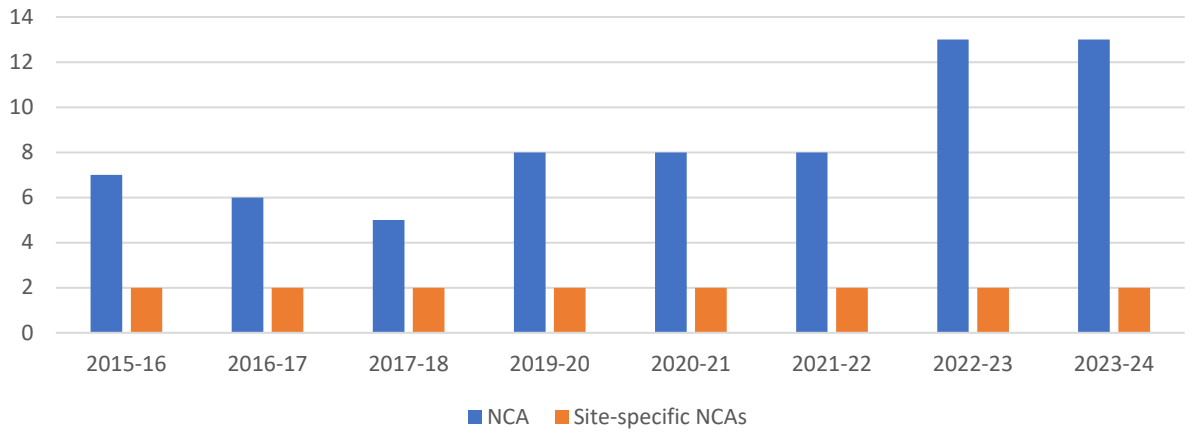


Table 3: Tap Water Exceedances per Fiscal Year

Chemical Parameters	MAC (mg/L)	Other Value (mg/L)	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
Aluminum*	2.9	OG < 0.1	0	0	0	0	0	0
Antimony	0.006		0	0	0	0	0	0
Arsenic	0.01		5	5	9	1	5	5
Barium	2.0		0	0	0	0	0	0
Boron	5.0		0	0	0	0	0	0
Cadmium	0.007		0	0	0	0	0	0
Chloride		AO ≤ 250	5	4	3	3	2	7
Chromium	0.05		0	0	0	0	0	0
Copper	2.0	AO ≤ 1	1	0	2	3	2	2
Fluoride	1.5		1	2	1	0	0	0
Iron		AO ≤ 0.3	71	103	121	119	124	137
Lead	0.005		1	8	26	14	20	14
Manganese	0.12	AO ≤ 0.02	48	40	29	42	31	35
Mercury	0.001		0	0	0	0	0	0
Nitrate and Nitrite	10		0	0	0	0	0	0
Selenium	0.05		0	0	0	0	0	0
Sodium		AO ≤ 200	2	3	4	2	2	5
Strontium	7.0		0	0	0	0	0	0
Sulphate		AO ≤ 500	2	1	0	1	2	1
Uranium	0.02		0	0	0	0	0	2
Zinc		AO ≤ 5.0	0	0	0	0	0	0

** GCDWQ MAC for total aluminum in drinking water is 2.9 mg/L based on a locational running average of a minimum of quarterly samples taken in the distribution system. The exceedance number reported in the above table for aluminum is not based on quarterly sampling, rather it is based on semi-annual sampling of tap water quality.*

Physical Parameters	MAC (mg/L)	Other Value	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
Colour	--	AO ≤ 15 TCU	437	416	446	449	424	451
pH	--	6.5-8.5	222	167	308	309	267	297
TDS	--	AO ≤ 500 mg/L	15	9	13	7	8	14
Turbidity	--	≤ 1.0 NTU	96	67	59	209	134	109

Disinfection By-Products (DBPs)	MAC (µg/L)	Other Value	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
Trihalomethanes	100 *	None	114	131	144	179	169	173
Haloacetic Acids	80 *	None	137	128	156	156	137	143

** Expressed as a locational running annual average of quarterly samples, collected at a point of the highest formation potential. A minimum of four samples per year, one in each season are required to determine if a particular water supply meets or exceeds the recommended limit.* ***The number reported in the table reflects the number of DBP exceedances in the last sampling season within the fiscal year (i.e. the winter sampling season that runs from January to March).***