

REPORT

Engineering Services

To: Mayor Cote and Members of Council **Date:** June 13, 2022

From: Lisa Leblanc
Director of Engineering Services **File:** 09.1865.20.07
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Item #: 2022-411

Subject: 2021 Annual Water Quality Monitoring Report

RECOMMENDATION

THAT the 2021 Annual Water Quality Monitoring Report be received.

PURPOSE

The purpose of this report is to present the 2021 Annual Water Quality Monitoring Report to Council. This report is an annual requirement to summarize and maintain a record of the water quality monitoring data collected during the subject year.

BACKGROUND

In 2003, the Province brought into effect the Drinking Water Protection Regulation (DWPR). Under the Regulation, a water purveyor is required to collect water samples in accordance with procedures, locations and frequency required by the Medical Health Officer. The water purveyor is also required to report the results of the analysis of the water samples collected at the request of or at a frequency specified by the Medical Health Officer.

Further to the required standards under the DWPR, the Guidelines for Canadian Drinking Water (GCDW) provide additional objectives that can be used to monitor the water quality being supplied by a distribution system.

The attached report is specific to the data collected within the City of New Westminster. Appendix B of the report outlining the detailed sampling data is extensive and will be available on the City's website.

ANALYSIS

There are 15 dedicated sampling stations distributed throughout the City such that a variety of different pressure zones, pipe sizes and flow volumes are sampled. The City also incorporates sample data from four Metro Vancouver sampling stations located on GVWD trunk mains supplying New Westminster.

The Drinking Water Protection Regulation requires a minimum number of samples to be collected based on the city's population. All samples are obtained by Metro Vancouver personnel and analyzed at the Metro Vancouver laboratory. In 2021, the number of samples obtained was well above the minimum required number. Water sample analysis results are sent simultaneously to both the City and the Medical Health Officer.

In 2021, samples were analyzed for the following parameters:

Water Quality Regulations:

- Total coliforms and E.coli

Water Quality Guidelines:

- Free chlorine
- Heterotrophic plate counts
- Turbidity
- Temperature
- Various metals; and
- Disinfection by-products.

The analysis performed on the City's water samples shows the drinking water supplied through the distribution system to be in compliance with the Canadian Drinking Water Regulations for E.coli levels. The total coliform levels were also in compliance, with three exceptions¹. No consecutive samples showed the presence of total coliforms.

The water quality analysis was also in compliance with the acceptable levels presented in the Guidelines for Canadian Drinking Water Quality. All stations met the average chlorine residual objective of 0.20 ppm except for station NWR-338 – Carol St. where the average chlorine residual was 0.19 ppm. As NWR-338 is located on a dead-end main with low water consumption, it requires frequent flushing by city crews to maintain the target chlorine concentration levels. All stations in the City were observed to have average chlorine residuals above 0.1 ppm, which is the GCDW minimum average required to prevent bacterial re-growth. The City completes a routine flushing program for dead end mains and recently installed automatic flushing devices to address potential low chlorine residuals. Through the asset management program, the City continues to replace aging infrastructure and evaluate opportunities for looping dead end mains to maintain water circulation and higher levels of chlorine.

¹ Three samples indicated the presence of total coliform per 100ml

In the past, Metro Vancouver has experienced periodic turbidity issues with supply water due to heavy rains causing high turbidity within the reservoir catchments. The City of New Westminster is primarily fed from the Coquitlam reservoir which typically has low turbidity levels. The City is also fed from the Seymour and Capilano reservoirs where the water filtration plant became fully operational in 2015, largely eliminating turbidity issues originating from those reservoirs.

Analysis for disinfection by-products indicate the annual average is improving, and the test results are within the guidelines.

The Fraser Health Authority has requested that the City implement a City-wide cross-connection control program. The objective is to mitigate the potential of backflow from private property into the City water distribution system. Council received a report on August 26, 2019 and supported in principle the development of a cross connection control program including necessary resources and staffing. The City has since engaged an industry expert (BSI Online Consultants) to assist in a 3 year phased implementation of the Cross-Connection Control Program across the Industrial, Commercial, Institutional (ICI) and Multi-Family sectors. Beginning in 2021, the City is developing an inventory of all testable backflow devices on multi-family and ICI properties, ensuring that they are brought into compliance and maintained/reported on an annual basis in order to protect the public drinking water system. The City has also completed an inventory and survey of all testable backflow devices on Civic Properties.

OPTIONS

The following options are presented for Council's consideration:

1. The 2021 Annual Water Quality Monitoring Report be received;
2. Council provide other direction for staff.

Staff recommends option 1.

CONCLUSION

The 2021 Annual Water Quality Monitoring Report has been prepared, and the City's water quality is in compliance with the Drinking Water Protection Regulation.

ATTACHMENTS

Attachment 1 - 2021 Water Quality Monitoring Report

APPROVALS

This report was prepared by:
Catalin Dobrescu, P.Eng. MBA, Utilities & Special Projects Engineer

This report was reviewed by:

Eugene Wat, P.Eng., PTOE, Manager of Infrastructure Planning

This report was approved by:

Lisa Leblanc, Director of Engineering Services

Lisa Spitale, Chief Administrative Officer