Safely reopening building water systems after COVID-19 shutdowns: Guidance for BC

Water systems do not pose a risk of COVID-19 transmission. However, building owners, managers and operators should address stagnant water system related risks such as Legionella and elevated levels of lead as they prepare to reopen community facilities, offices, hotels and other buildings that were shut down or had reduced occupancy for weeks during the COVID-19 pandemic.

What's the risk?

Reduced occupancy and water flow reductions may lead to stagnation, increasing health risks from harmful pathogens like Legionella. Legionella can cause Legionnaire's disease when water containing the bacteria is aerosolized (spread through the air) and inhaled. These conditions can also decrease the residual concentration of disinfectant in drinking water systems, cause problems with corrosion of materials, and increase concentrations of toxic metals such as lead and copper. Additionally, stagnation can cause discoloured, poor tasting or odorous water.

Before reopening buildings:

Before buildings are reopened, building systems, operational equipment and components should be inspected and run to ensure they are clean and working correctly. Stagnant water should be replaced with fresh water. A respirator, N95 mask or other Personal Protective Equipment as recommended by WorkSafe BC should be worn when water is turned on at fixtures, as flushing can cause Legionella to be aerosolized. Cold water lines should be completely flushed first, followed by hot water lines if they have not been maintained above 50°C at all points throughout the shutdown (see links below for detailed instructions). If water supply is chlorinated, test to ensure there is chlorine residual at the point of consumption farthest from the water entry. If testing is not possible, let the cold tap run at each fixture for several minutes until the water temperature turns colder. Larger building systems will likely require longer flushing periods and should be flushed following a sequential routine to flush stagnant water out of the primary distribution lines before flushing point-of-use fixtures.

After water supply in the building is properly restored, drain and flush places where water is stored, such as hot water tanks, hot water recirculating loop(s), pressure tanks, humidifiers, ice machines, coffee makers, water fountains, water coolers and dishwashers. Cooling towers not fully maintained during the shutdown require cleaning and start-up disinfection as per the manufacturer's guidance. With aerators removed and cleaned, flush all fixtures such as faucets, drinking fountains, showers and eye wash stations. Consideration should be given to shutting down, draining and cleaning mechanical equipment.

All employers are required by WorkSafeBC to develop a plan to ensure that the risk of transmission of SARS-CoV-2 at workplaces is minimized, and the Provincial Health Officer has ordered all employers to post a copy of their COVID-19 Safety Plan on their website, if they have one, and at their workplace so that it is readily available for review by building occupants and visitors. Be prepared to provide a copy of your COVID-19 Safety Plan to a health officer or a WorkSafeBC officer, on request.
Consider including notice to building users when the water quality in the building has been restored.

After buildings are reopened:

If buildings will continue to be only partially occupied, weekly preventive flushes of five minutes from the hot and cold water networks should be considered. All parts of the hot water system should be maintained above 50°C to prevent growth of bacteria.

For more information:

NCCEH list of guidance documents and instructions for addressing Legionella and lead risks
https://ncceh.ca/environmental-health-in-canada/health-agency-projects/managing-legionella-risks-covid-19-pandemic

Vancouver Coastal Health memo to facility owners, managers and operators re: stagnant water risks
http://www.vch.ca/Documents/VCH%20Bulletin%20-%20Building%20Water%20Systems%20and%20COVID19%20.PDF

WorkSafe BC guidelines: COVID-19 and returning to safe operation - Phase 2
https://www.worksafebc.com/en/about-us/covid-19-updates/covid-19-returning-safe-operation