



REGIONAL DISTRICT NORTH OKANAGAN – GREATER VERNON WATER

Cross Connection Control Program Information Fact Sheet

Things you need to know about the Program

The RDNO-GVW is committed to providing safe and clean drinking water for the system end user; however, the RDNO-GVW cannot always protect water from backflow or cross connection contamination after it has entered the distribution system. To ensure water remains clean and uncontaminated right to your tap, the RDNO-GVW has implemented a Cross Connection Control Program.

A Cross Connection Control Program is a legislated requirement within the *BC Drinking Water Protection Act*. The Regional District of North Okanagan (RDNO) – Greater Vernon Water (GVW) has implemented a bylaw “RDNO Cross Connection Control Regulation Bylaw No. 2651, 2014” to protect Greater Vernon’s drinking water from contamination through cross connections due to backflow of water into the public water distribution system.

What is a cross connection?

A cross connection is a connection between the drinking water system and any potential source of contamination. Cross connections can be eliminated by installing equipment such as a mechanical backflow preventer that will stop contaminants from flowing backward within a piping system and into the potable water system.

Cross connections are found in most plumbing systems, some are more obvious than others:

- Boilers and swamp coolers
- Agricultural water (watering troughs, fertilizer tanks and systems, irrigation etc.)
- Janitor sinks and soap dispensers
- Drain hoses in floor drains

How does the backflow happen?

Backflow happens when water in a plumbing system flows backwards or in reverse, due to hydraulic conditions that can occur in a piping system. There are two types of backflow:

Backsiphonage: This condition may be caused by water main breaks, during high water withdrawal from fire hydrants or shutting off supply for maintenance or repairs to the water lines or plumbing system. This may cause a vacuum in the piping if the pressure is reduced below atmospheric.

Backpressure: This occurs when pressure in the users’ plumbing system becomes greater than the pressure in the potable water distribution system. The primary sources of backpressure are booster pumps, thermal expansion from a boiler or water heater, elevated plumbing or interconnection with other piping systems with higher pressure.

Cross Connection Events

Cross contamination can pose a serious health risk to the public water system and the following are a few examples of cross connection issues that have occurred on the GVW system in the past number of years. These events show how important backflow prevention and premise isolation are to help mitigate the risk of cross contamination to our drinking water supply.

1. Glycol was found in a private water system but fortunately this site had premise isolation and this serious poison didn't get into the public supply.
2. An entire neighborhood in the Mission Hill area had to be isolated with a "Do Not Use" notice while the entire area was flushed and tested due to a contamination issue, this neighborhood was without water for three (3) days.
3. A resident in a separated area connected a non-potable (untreated) water source to the house water supply as it had a higher pressure. This site had premise isolation so non-potable water did not feed back into the GVW system; however, if it did not have premise isolation, non-potable water would have been fed continuously into the potable water supply posing a health risk to the public (all properties with non-potable services are required to have premise isolation).
4. A main break caused the contents of a boiler within an apartment building to enter the public water system and the distribution system required significant flushing in order to ensure public safety.
5. Antwerp Springs contamination event was caused by a cross connection where approximately 2,000 homes were without water for over a week and GVW was criminally charged through the *Water Act* and the *Drinking Water Protection Act*.
6. Numerous site specific samples with bacteria, turbidity, elevated metals and other substances have been detected in strata and multi-family developments that were not found in the public supply.

How does the Cross Connection Control Program (CCCP) Work?

The CCCP involves on-site water system inspections of industrial, commercial, institutional and agricultural water customers, with the greatest priority placed on those considered high risk.

Inspections of both new and existing commercial, industrial, institutional and agricultural facilities are ongoing. Inspections of new homes are done through the building inspection process. The program includes an Emergency Response Plan, a process for annual inspections and testing of backflow preventers and a public awareness campaign. The Program is a proactive approach to help safeguard our drinking water from contamination through backflow. It regulates the selection, installation, maintenance and testing of backflow preventers for controlling cross connections – all approved methods under national and provincial regulations.

If you have any questions or concerns regarding the Cross Connection Control Program, please contact the Regional District of North Okanagan – Greater Vernon Water at 250-550-3654.