

Explaining Cross-Connection Backpressure and Backsiphonage*

*The following information has been extracted from the BC Water and Waste Association (BCWWA) website:

Backpressure and backsiphonage incidents can occur in a water piping system more often than you might think. Examples of backpressure and backsiphonage are provided below.

Example 1

Figure No. 1 represents an example of how water typically flows under normal conditions.

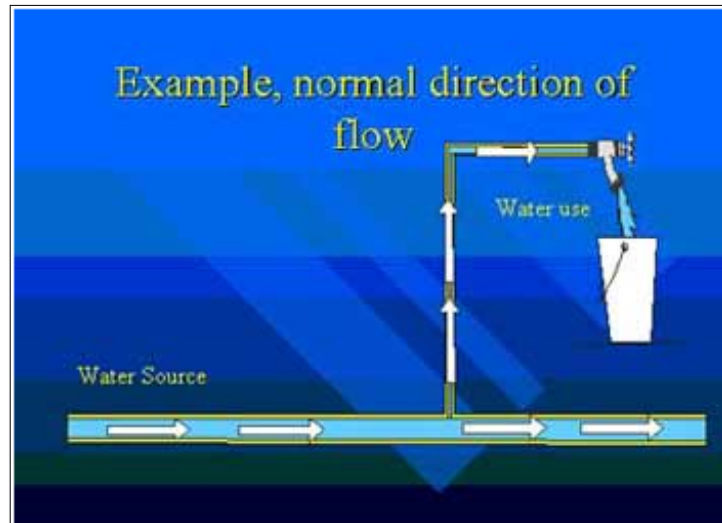


Figure No. 1 - How water typically flows under normal conditions

Example 2

In **Figure No. 2**, a fire hydrant is opened allowing water out of the water mains at a high rate of flow, which reduces the pressure in the mains to a point that there will be a reversal of flow elsewhere in the system. If a connection to a contaminated source exists, backsiphonage will occur from this source and contaminate the system.

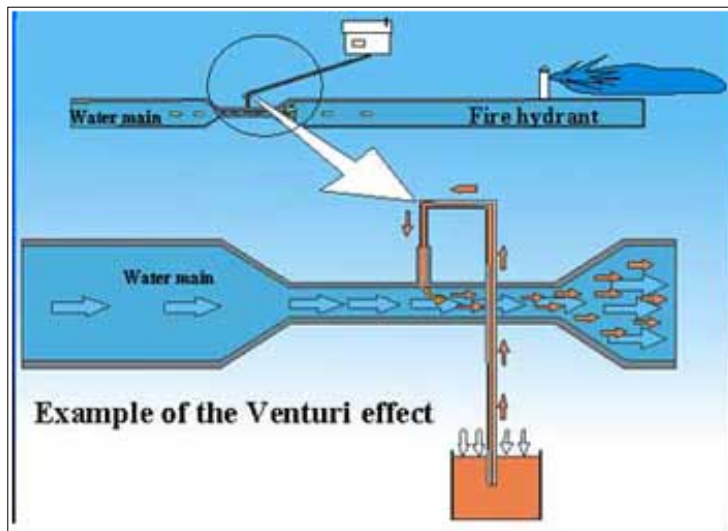


Figure No. 2 - Backsiphonage as a result of an opened fire hydrant.

Example 3

Backsiphonage can even occur in a residential application. **Figure No. 3** shows a common garden chemical sprayer connected to a garden hose. If the faucet in the house is turned on, it can create a venturi effect at the tee where the hose pipe and the faucet pipe meet and pull the water and chemicals from the garden hose. This can also occur in a situation where a hose is left submerged in a hot tub.

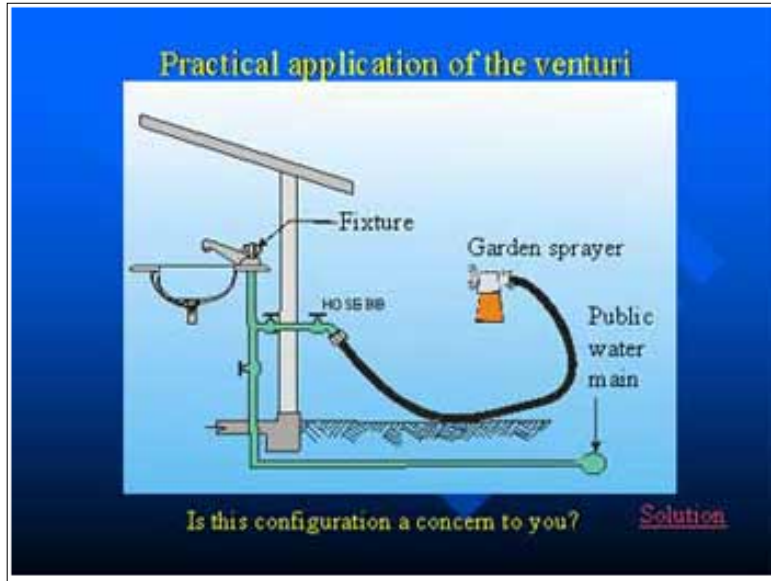


Figure No. 3 - Potential backsiphonage in a residential application.

Example 4

Figure No. 4 shows a boiler used in both residential and commercial applications. A boiler system is connected to the potable water source. Water in the system evaporates and must be replaced. If the boiler system pressure exceeds that of the potable water system, then the contaminated water from the boiler system will flow in the potable water.

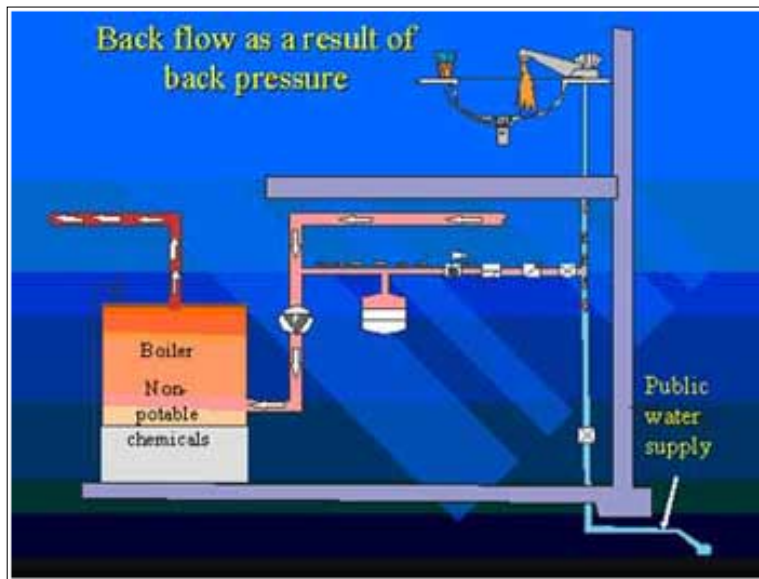


Figure No. 4 - A boiler used in residential and commercial applications.