Protection of the Water Distribution System

A home or business may require (as a condition of water service) the installation of a backflow prevention device to provide additional protection for the public drinking water system.

The devices used for low hazard locations (most residential homes) are typically Hose Connection Vacuum Breakers, Double Check with Atmospheric Port and Dual Check Valves. Other protection could be an Approved Air Gap. Graphics of these non-testable devices are shown below.

Non-Testable Devices

Hose Connection Vacuum Breaker

Dual Check Valve

Double Check with Atmospheric Port

Testable Devices

Examples of testable devices (shown below) include the Reduced Pressure Backflow (or Principle) Assembly, Double Check Valve Assembly and the Pressure Vacuum Breaker Assembly:

Reduced Pressure Detector Assembly

Double Check Valve Assembly

Pressure Vacuum Breaker Assembly

Device photos courtesy of Watts Water Technologies

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Thank you for being a partner in safe drinking water

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UBC UTILITIES
Water Quality Department

Cross Connection Control Program

Help us protect UBC's drinking water

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What is Cross Connection?

A cross connection is any actual or potential connection between the drinking water system and any source of pollution or contamination (harmful chemicals and/or bacteria).

How Contamination Occurs

Water normally flows in one direction, from the public drinking water system through a building's cold or hot water plumbing to a sink tap or other plumbing fixture.

Under certain conditions, water can flow in the opposite direction. This is known as **backflow**. Backflow occurs when a back siphonage or back pressure condition is created in a water line.

Back siphonage is when water flows in the opposite direction caused by a negative pressure in the water line. This can happen in any building where there is a reduction or stoppage of the main water supply pressure because of nearby fire fighting, repairs or breaks in watermains.

Back pressure can be created when a source of pressure, such as a pump, creates a pressure greater than the one supplied from the water distribution system. The primary sources of backpressure are booster pumps, thermal expansion from a boiler, elevated plumbing or interconnection with other piping systems with higher pressure.

Where are Cross Connections Typically Found?

Cross connections are found in all plumbing systems; some more obvious than others:

- **Boilers**
- **Wash basins and service sinks**
- **Soft drink beverage dispensers**
- **Air conditioners**
- **Swimming pools**
- **Hot tubs, decorative ponds and fountains**
- **Some irrigation and sprinkler systems**
- **Soap dispensers**
- **Drain hoses in floor drains**

(This is not an exhaustive list)

Cross Connection Control Program

The purpose of the program is to safeguard the public water supply from backflow occurrences at the water service. Under UBC Utilities' cross connection control program, UBC Utilities personnel or a representative may inspect your facilities to ensure compliance with this program.

Responsibility

Safeguarding UBC's drinking water is everyone's responsibility.

Legislation has made cross connection control programs mandatory for all municipalities in Canada. UBC Utilities meets its responsibility by supplying excellent drinking water that is well within the guidelines provided in the Drinking Water Protection Act.

Owners and occupants have a responsibility too. They must ensure no cross connections exist on their property, as per the BC Plumbing Code and the Canadian Standards Association.

The potential health hazard created by a cross connection determines the type of device that is required for backflow prevention. The following page describes some common backflow prevention assemblies.

These devices must be tested upon installation and annually thereafter to ensure that they function continuously. UBC Utilities recognizes that significant costs could be involved for some facilities.

We are committed to working with you to minimize any disruptions and to recommend the most economical way to make necessary retrofits.

photos: MorgueFile