

What is the Public Service Authority Doing to Prevent Cross-Connection?

The PSA installs check valves on water services. These valves close when water begins to backflow. All new services are installed with check valves. In addition, each year the PSA selects an area for service upgrades, which include the installation of check valves. Staff notifies the customers at least 3 months in advance so that customers can determine whether they have an expansion tank installed on the water heater supply line. If it is not installed, the customer should consider installing one. The expansion tank prevents damage to the supply line. Heat from the water heater causes water expansion in the supply line, and the increased pressure can cause leaks or breakage.

Common Household Plumbing Hazards

These fixtures have inlets that can be submerged:

- ◆ Bathtub
- ◆ Bidet
- ◆ Ice maker
- ◆ Lawn sprinkler system
- ◆ Toilet (tank type)
- ◆ Water softener
- ◆ Washing machine

- ◆ Kitchen faucet, pullout sprayer
- ◆ Dishwasher

Understanding Household Hazards

Help protect your
Drinking Water
From
Contamination

What is a Cross Connection?

A cross-connection is any actual or potential link or connection between your drinking water system and any source of contamination. They can cause water to flow back into the water system through *backpressure* or *backsiphonage*.

Backflow is simply the flow of water in the wrong direction, opposite its usual flow into the customer's plumbing. It is caused by:

Backsiphonage, which occurs when a partial vacuum causes the water to flow backwards, toward the water system from the customer's plumbing. Contaminants are siphoned, or "sucked" into the system. OR

Backpressure, which occurs when contaminants under pressures greater than those found in the water system are pushed into the water system. These pressures can be caused by a pump, for example.

Examples

- ◆ A customer is filling a wading pool with a garden hose, and the hose end is below the water surface. A fire flow from a hydrant somewhere in the system causes low pressure in the water main. Without a vacuum breaker, the water flows from the pool into the water main, contaminating the water system.
- ◆ Backpressure resulting from tank cleaning activities by a gas company in Connecticut caused propane to backflow into the distribution system, causing fires in two homes and evacuation of hundreds of people. Gas company workers were purging a propane tank with water and did not realize the pressure in the tank was

greater than in the water line feeding the tank, thus creating a backpressure of propane vapor into the distribution system (US EPA, 1989).

How You Can Prevent Contamination

DO

Install a vacuum breaker on your outside spigot and use it correctly

If not already equipped, install approved backflow prevention devices on your underground lawn irrigation system.

Get advice from a licensed plumber on how to ensure the devices are of good quality and are working properly.

DON'T

Allow hose ends to lie in buckets or other containers.



Connect water softener drain pipes to the sewer or drain pipe without an air gap

Use garden or lawn sprayers without an approved backflow prevention device.

Vacuum Breaker

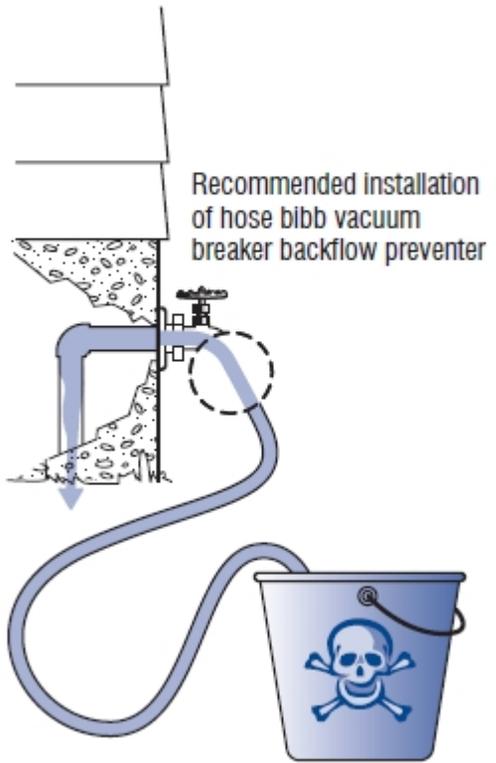
A vacuum breaker designed specifically for a garden hose attaches to the hose bibb's threads. The hose attaches to the vacuum breaker. It prevents contaminated water from flowing back into the water system.



Air Gap

Leave a gap between the end of a pipe or hose and the





EPA Cross-Connection Control Manual EPA 816-R-03-002