# CROSS CONNECTION

## WHAT IS A CROSS CONNECTION?

A cross-connection is a point in a plumbing system where it is possible for a nonpotable substance to come into contact with the potable drinking water supply. Common examples of cross-connections include a garden hose submerged in a pesticide mixture, a piped connection providing potable feed water to an industrial process, such as a cooling tower, or a submerged outlet of an irrigation system. Connections to firefighting equipment are other very common cross-connections. Most cross-connections occur beyond the customer service connection, within residential, commercial, institutional or industrial plumbing systems. Identifying cross-connections can be challenging because many distribution systems are expanding to serve new customers and changing to accommodate customer needs. Further, temporary and permanent cross-connections can be created in existing facilities without the knowledge of the water system managers and operators.

## WHAT IS BACKFLOW?

Backflow is any unwanted flow of used or nonpotable water, or other substances from any domestic, industrial, or institutional piping system back into the potable water distribution system. The direction of flow under these conditions is opposite to that of normal flow and is caused by either backsiphonage or backpressure.

*Backsiphonage* is backflow caused by a negative pressure (vacuum or partial vacuum) in the supply piping. Backsiphonage occurs when system pressure is reduced below atmospheric pressure. The effect is similar to sipping water through a straw.

*Backpressure* is backflow caused by pressure in the customer's plumbing being greater than the pressure in the water supply piping. The higher pressure in the customer's plumbing may be from a booster pump, heating boiler, etc.

Outside water taps and garden hoses tend to be the most common sources of cross connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed control. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals.

The Hanson Water Department is continuously jeopardized by cross connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We continually survey all industrial, commercial and institutional facilities in Hanson to make sure that all potential cross connections have been identified and eliminated or properly protected by a backflow prevention device. We also inspect and test each backflow preventer to make sure that it is providing maximum protection.

Please call this office at 781-447-1200 should you have any questions regarding cross connections and backflow.

For additional information please see the following web sites:

Environmental Protection Agency Cross Connection Control Manual:
www.epa.gov/ogwdw/pdfs/crossconnection/crossconnection.pdf
Massachusetts Department of Environmental Protection Cross Connection Regulations:
www.mass.gov/dep/water/ccdefreg.pdf

## OWNERS' RESPONSIBILITY

### CROSS CONNECTION CONTROL
### REDUCED PRESSURE BACKFLOW PREVENTERS AND DOUBLE CHECK VALVE ASSEMBLIES
### TESTING AND REPAIR POLICY

In accordance with Drinking Water Regulations of MASS 310 CMR 22.22 Sec. 13 (D), all installations of reduced pressure backflow preventer assemblies shall be tested semi-annually by the supplier of water. In addition, double check valve assemblies shall be tested annually by the supplier of water.

All tests must be conducted by a certified Backflow Prevention Device tester in accordance with the regulated test procedures. The result of these tests must be recorded on the Standard Inspection and Maintenance Report Form. This form must be completely filled out (including the cross connection ID# from the DEP permit), signed and dated by the owner and the certified tester. All copies of the Inspection and Maintenance Report Forms shall be maintained by the owner.

The owner or owner's agent must maintain on the premises a spare parts kit and any special tools required for removal and reassembling of devices which are to be tested. The presence of these materials must be recorded on the Inspection and Maintenance Report Form.

Devices failing a test or found defective shall be overhauled, repaired or replaced by a plumber or a mechanical fire sprinkler contractor. They must be licensed by the Commonwealth of Massachusetts and re-inspected within two weeks of the initial inspection date.

Thank you for your cooperation in protecting the Hanson water supply. If you desire any additional information, please call us at 781-447-1200.