

## Water Backflow Can Mean Trouble

Because water is always under pressure, it can only flow in one direction.

But can it flow the opposite way from its intended direction? The answer is yes—and when it does, it can sometimes cause disastrous results.

Water will always flow toward the point of lowest pressure. If a main line in our system should break or if a fire occurs and the fire department opens several hydrants, the pressure in the water mains can drop dramatically, causing a reversal of flow.

The potential for this reversal of flow is why Klickitat PUD is concerned about the possibility of backflow of contaminants into our water system.

If your plumbing, which carries potable water, is connected to piping carrying another fluid or gas, such as an air conditioner containing chemicals to kill algae, the contaminant could be drawn back into our water mains.

A garden hose submerged into a hot tub or swimming pool and inserted into your car's radiator to flush out the antifreeze or attached to an insecticide sprayer, could siphon that material back into our water mains.

Incidents such as this have happened too often, and have been documented throughout the country. This is why state regulations require water systems to have a cross-connection control program in place for preventing backflow incidents.

The program consists of inspections to identify actual or potential cross connections, eliminate cross connections, where possible, and install special check valve assemblies where the cross connection cannot be avoided.

Some cross connections are necessary. Examples include the water line connected to a fire sprinkler system, a solar heating system or various water-using industrial equipment.

The fire sprinkler system is of concern because the pipe is not approved for potable water use. The black

iron pipe—sometimes with corrosion inhibitors built in—can leach out metals when the water sits stagnant for long periods.

In tests performed on the water drawn from the fire lines in several locations in Oregon, Washington and Utah, concentrations of iron, lead, cadmium and other heavy metals were found. Bacterial regrowth also will occur in the stagnant water.

Solar heating systems most often use other liquids in the solar collectors. This heated liquid flows through pipes surrounded by potable water and transfers the heat. Many different liquids are used for the transfer medium, some of which are toxic. If a leak in the piping should occur, the potable water would become contaminated.

A high school in Redmond, Oregon, had ethylene glycol antifreeze from an air conditioner backflow into the water piping, sending eight teachers to the hospital. Several incidents have occurred where a car wash cross connected its plumbing and pumped dirty, soapy water through several city blocks.

In a town in Arkansas, a worker hooked up a hose to a nearly empty propane tank to flush out the tank. The residual pressure of the propane was greater than the water pressure, and several homes exploded and burned.

Cross connection control inspectors can help the water user identify potential problems, and suggest ways to eliminate them or recommend the proper backflow prevention assembly required by the State.

Klickitat PUD has a program to identify potential cross connections and oversee the installation of backflow prevention assemblies.

While our goal is to always provide you with safe, dependable water, we cannot do it alone.

We need your help to prevent contamination through backflow and to keep our water safe throughout the system. ■

### Questions? Call Your Klickitat PUD Water/Wastewater Department

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