

2. - BACKFLOW AT A CAR WASH FACILITY

DATE OF BACKFLOW INCIDENT: February 1979 LOCATION OF BACKFLOW INCIDENT: Seattle, Washington SOURCE(S) OF INFORMATION:

- American Water Works Association, Recommended Practice for Backflow Prevention and Cross-Connection Control, AWWA Manual M14, Second Edition, 1990
- Pacific Northwest Section of the American Water Works Association, Summary of Backflow Incidents, Fourth Edition, 1995
- U.S. Environmental Protection Agency, Cross-Connection Control Manual, 1989
- Watts Industries, Inc.; Watts Regulator News/Stop Backflow

CASE HISTORY

On February 12, 1979, many residents in the Greenwood District of Seattle, Washington, began complaining about "grey-green and slippery," "muddy," or "soapy" water. One resident brought a water sample to the Seattle Water Quality Laboratory. Preliminary analysis of this sample showed that the water was contaminated with a detergent solution. The Seattle Water Department dispatched an emergency field crew to initiate flushing of hydrants in the affected area. Investigation revealed that recycled wash/rinse water at a large car wash facility had backflowed into the public water system.

On February 10, a high-pressure pump at the car wash facility broke down. This pump was used to pump recycled wash/rinse water to the initial/scrubber cycle of the car wash, which was not normally connected to the potable water system at the car wash. After the pump broke down, workers kept the car wash operating by connecting a two-inch-diameter hose between piping in the rinse cycle of the car wash, which was directly supplied with water by the car wash's potable water system, and piping in the scrubber cycle.

On February 12, the owner of the car wash facility repaired the high-pressure pump and turned it on. However, nobody removed the hose connection between the rinse-cycle piping and the scrubber-cycle piping. Unbeknown to car wash personnel, the high-pressure pump forced a large quantity of recycled wash/rinse water through the hose connection, the rinse-cycle piping, and the car wash's potable water system into the public water system. This recycled wash/rinse water was, in turn, distributed to the potable water systems of homes and commercial establishments in the surrounding area. Sometime later, a car wash employee flushed the toilet in the car wash's rest room and noticed brown soapy water in the toilet bowl. Car wash personnel quickly realized that they had created a cross-connection and removed the hose between the rinse-cycle piping and the scrubber-cycle piping.

After finding the source of the soapy water problem, the City Water Department conducted water main flushing to intercept and limit the scope of the contamination. Because of its prompt response, the City Water Department confined the contamination to an eight-block area. Nevertheless, the City Water Department delivered a public notification statement to six radio and television stations. Two people in the contaminated

area reported illness after drinking the water, but investigations by the Seattle-King County Health Department epidemiologist were unable to authenticate either report.

The City Water Department ordered the owner of the car wash facility to install a reduced-pressure principle backflow-prevention assembly in the potable water service connection to the car wash. The owner complied within 24 hours.