



Cross Connection Control

Unapproved Auxiliary Water Supplies

331-743 • 1/12/2024

Unapproved Auxiliary Water Supplies pose a huge risk to public water systems. State drinking water rules define an unapproved auxiliary water supply as:

"...a water supply (other than the purveyor's water supply) on or available to the consumer's premises that is either not approved for human consumption by the health agency having jurisdiction or is not otherwise acceptable to the purveyor."

Unapproved water sources may include private wells, lakes, ponds, rivers, irrigation water, fire-fighting supplies, reclaimed water, gray water, rainwater collection systems, and/or water from a separate source. Customers may use unapproved water supplies for potable purposes or for non-potable uses such as lawn sprinklers. Unapproved water supplies are pressurized systems that can easily overcome the potable water supply pressure and potentially contaminate large portions of the public water system.

The public water system's Cross-Connection Control Specialists (CCS) may consider any unapproved water source that they don't want to enter the drinking water system as an *unapproved auxiliary water supply*, even if it meets drinking water standards.

Requirements with Unapproved Water Supplies

Situation 1

The Unapproved Water Supply Connected to the Potable Water Supply

Washington state drinking water rules require premises isolation (with an RPBA or air gap) for all service connections with unapproved water supplies *when the customer connects the unapproved supply to the potable water supply*.

Connecting unapproved water supplies with potable water supplies is relatively common when lawn irrigation systems use both the purveyor's potable supply and the unapproved water supply (usually untreated surface water). This potential piping arrangement enables customers to irrigate their lawns with potable water when the irrigation water is limited or not available.

Situation 2

The Unapproved Water Supply is NOT Connected to the Potable Water Supply

Current state drinking water rules don't specifically address situations where the customer has an unapproved water supply **not connected** to the potable water supply.

DOH Cross-Connection Control (CCC) Guidance Manuals

- ◆ Consider *all* unapproved water supplies a potential hazard to public water systems.
- ◆ Recommend premises isolation for any service connection with an unapproved water source *whether or not the unapproved water is connected to the public water supply*.
- ◆ The PNWS-AWWA Sixth Edition CCC Manual considers all *unapproved* water supplies to pose a high health hazard due to actual (or potential) bacteriological or chemical contamination.
- ◆ Clarify that the CCS only needs to determine that an unapproved water supply is available to a customer and in a quantity sufficient for the customer to be able to use the unapproved supply.

The Public Water System CCC Program May be More Stringent and Protective of Public Health

Our CCC rules establish minimum requirements for water purveyors. However, under current rules, the public water system may establish more stringent and protective CCC Program requirements at local levels.

Public water systems take more stringent and protective actions because customers:

- ◆ Can easily connect an unapproved water supply to a potable water supply (often after the CCS's most recent hazard survey).
- ◆ Can establish such connections without the CCS (or local plumbing official's) approval or knowledge.
- ◆ Unapproved water supplies can become the source of large volumes of contaminated water entering the public water system.

Requiring premises isolation for all connections with unapproved water supplies:

- ◆ Provides enhanced protection for the public water distribution system.
- ◆ Increases public health protection for consumers served by the public water system.
- ◆ May decrease the purveyor's overall CCC workload by reducing the need for more frequent hazard resurveys (by the purveyor) of premises with unapproved supplies. Without this approach, such resurveys would be required to confirm that customers have not interconnected their potable water supplies and unapproved water supplies since the purveyor's last hazard surveys.

Backflow Incident Issues

A well-documented backflow incident involving an unapproved water supply occurred in Washington in 1995. Large quantities of irrigation water (untreated surface water) entered the public water system over several months.

The CCS traced the source of the backflow incident to a customer operating a commercial nursery. The customer connected the newly available irrigation water supply to the nursery's

irrigation system while maintaining a connection to the purveyor's water supply. The backflow incident resulted in 11 confirmed cases of giardiasis in customers served by the public water system.

Current Practices for Unapproved Water Supplies

The public water system's written CCC Program Plan should clearly state how to address unapproved water supplies. Purveyors may use the unapproved water language in the DOH CCC Guidance Manual to amend their current written CCC program plans as needed. The public water system has several options to consider.

1. Most protective of public health.

The CCS requires the installation of a reduced pressure backflow assembly (RPBA) for premises isolation for any customer that has an unapproved water supply on the premises.

These water systems require an RPBA for premises isolation *whether or not there is a physical connection between the unapproved water supply and the purveyor's water system.*

2. Less protective of public health.

The CCS requires the installation of a premises isolation Double check valve assembly (DCVA) for any customer with an unapproved water supply on the premises *when no physical connection exists between the unapproved water supply and the purveyor's water system.*

3. Least protective of public health.

The CCS does not require any backflow prevention for customers with an unapproved water supply on the premises when the unapproved water supply and the potable water supply are **not** interconnected. Instead, for these connections, the CCS relies on public education and more frequent hazard surveys to protect the public water system from contamination.

More Resources

The following manuals are excellent resources for CCC topics.

- ◆ American Water Works Association (AWWA)—*Recommended Practice for Backflow Prevention and Cross-Connection Control* (Manual M-14), 4th Edition (2015).
- ◆ Pacific Northwest Section of the AWWA (PNWS-AWWA) *Cross Connection Control Manual—Accepted Procedure and Practice*, sometimes referred to as the "Yellow Manual," 6th Edition (1995).
- ◆ University of Southern California (USC) Foundation for Cross-Connection Control and Hydraulic Research—*Manual of Cross-Connection Control*, 10th Edition (2009).
- ◆ Department of Health publication, [Cross-Connection Control \(CCC\) Guidance Manual for Small Water Systems 331-234 \(PDF\)](#).

For More Information

Find more resources on our [Publications and Forms webpage](#).

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