



41-01511

OREGON CITY PUBLIC WORKS

Water Division

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Cross Connection

CROSS CONNECTION / BACKFLOW PREVENTION PROGRAM

Policies and Procedures

Oregon City follows guidelines established by the following regulatory agencies in determining the appropriate backflow prevention device for any given situation:

- Oregon Health Authority, Drinking Water Services (DWS) – OAR 333-61-025, OAR 333-61-0070, OAR 333-61-0071,
- American Water Works Association (AWWA), Standards C510, C511, and Manual M14,
- AWWA Pacific Northwest Section – Cross-Connection Control Manual, Seventh edition, April 2012, and
- University of Southern California, Foundation for Cross-Connection Control and Hydraulic Research – Manual of Cross Connection Control, Tenth Edition, October 2009.

Oregon City Public Works (OCPW) will conduct inspections and/or surveys in order to determine the existence of, or potential for, cross connections to the public water supply. Whenever a water user or the owner of the premises obtaining water from Oregon City's public water system adds any chemical or substance to the water, they shall notify OCPW.

The type of backflow prevention required shall be commensurate with the degree of hazard that exists:

- An approved air gap of at least twice the inside diameter, but not less than one inch, of the incoming supply line measured vertically above the top rim of the vessel, or an approved reduced pressure backflow assembly (RPBA) or reduced pressure detector assembly (RPDA) shall be installed where the substance which could backflow poses a health hazard (contaminant).
- An approved double check valve assembly (DCVA) or double check detector assembly (DCDA) shall be installed where any substance other than potable water could backflow and poses a non-health hazard (pollutant).
- An approved pressure vacuum breaker assembly (PVBA), spill resistance vacuum breaker assembly (SVBA), or an atmospheric vacuum breaker (AVB) shall be installed where the substance that could backflow poses a non-health hazard (pollutant) and

where there is no possibility of backpressure in the downstream piping. A shutoff valve may be installed on the line downstream of a PVBA or SVBA, but shall not be installed downstream of an AVB.

Following are premises regarded as health hazards and require isolation by an approved air gap or reduced pressure principle type of assembly:

1. Agricultural (e.g. farms, dairies)
2. Beverage bottling plants*
3. Car washes
4. Chemical plants
5. Commercial laundries and dry cleaners
6. Premises where both reclaimed and potable water are used
7. Film processing plants
8. Food processing plants
9. Medical centers (e.g., hospitals, medical clinics, nursing homes, veterinary clinics, dental clinics, blood plasma centers)
10. Premises with irrigation systems that use the water supplier's water with chemical additions (e.g., parks, playgrounds, golf courses, cemeteries, housing estates)
11. Laboratories
12. Metal plating industries
13. Mortuaries
14. Petroleum processing or storage plants
15. Piers and docks
16. Radioactive material processing plants and nuclear reactors
17. Wastewater lift stations and pumping stations
18. Wastewater treatment plants
19. Premises with piping under pressure for conveying liquids other than potable water and the piping is installed in proximity to potable water piping
20. Premises with an unapproved auxiliary water supply that is connected to a potable water supply
21. Premises where the water supplier is denied access or restricted access for survey
22. Premises where the water is being treated by the addition of chemical or other additives

* A Double Check Valve Backflow Prevention Assembly could be used if Oregon City Water Division determines there is only a non-health hazard at a beverage bottling plant.

Regardless of application, all backflow prevention assemblies installed within the Oregon City's water distribution system boundaries shall be of a type and model approved by the Oregon Health Authority. These are assemblies meeting the specifications of construction, evaluation and approval of the above-mentioned regulatory agencies. All assemblies shall be installed in accordance with OAR 333-061-0071. Additional information about approved assemblies and installation standards can be found here:

<http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/CrossConnection/Pages/assembly.aspx>.

The water user or the owner of the premises where one or more backflow prevention assemblies (i.e., RPBA, DCVA, PVB, SVBA, DCDA, or RPDA) have been installed shall have the assemblies tested by an Oregon-certified tester at least once per year. OCPW may require more frequent tests at facilities that pose an extreme health risk and for assemblies that repeatedly fail.

Backflow prevention assemblies found not to be functioning properly shall be repaired promptly by the water user or owner of the assembly or OCPW may deny or discontinue water service. After a backflow assembly is repaired, installed or moved, the assembly shall be tested prior to use. Tests performed by Oregon-certified testers shall be in conformance with procedures established by the Foundation for Cross Connection Control and Hydraulic Research, Manual of Cross Connection Control, Tenth Edition, October 2009, University of Southern California.

Non-health hazard assemblies (i.e., DC, DCDA, PVB, and SVBA) that fail to function properly, or fail the established test procedure, shall be repaired or replaced within 30 days. Health hazard assemblies (i.e., RP and RPDA) that fail to function properly, or fail the established test procedure, shall be repaired or replaced within 15 days. If an Oregon City Cross Connection Specialist determines that the hazard poses a threat to public safety, the assembly must be repaired immediately. Delay in repair is cause for discontinuance of water service until repair and re-testing prove the assembly to be functioning properly.

Reports on backflow assembly tests shall be prepared by an Oregon-certified tester and copies provided to the water user or the owner of the assembly. In addition, copies of all such reports shall be provided to OCPW (3 options):

Mail to:
CC/BPP
122 South Center St
Oregon City OR 97045

Fax to:
503.650.9590

Email to:
cc-bpp@orc.org

Test reports shall arrive at OCPW within 10 working days of the test date per OAR 333-061-0070 (15)(a). Test reports that are illegible and/or incomplete will not be accepted. Reports for

DCDA's and RPDA's should include the detector meter reading, preferably on the test report for the bypass assembly.

Testers must forward proof of current Oregon DWS Backflow Assembly Tester certification to OCPW prior to performing tests within the service area. A master list of backflow prevention assemblies (service location, number of assemblies, month due) installed within the Oregon City water distribution system boundaries will be made available through a Public Records Request by contacting the City Recorder's Office at 503.496.1505 or www.orcity.org. For answers to questions about the Oregon City water distribution system boundaries, or specific assemblies within the boundaries, contact Water Quality staff at 503.657.8241 ext 2121, or email cc-bpp@orcity.org.

During construction of new water systems (water mains, valves, hydrants, services lines, and other appurtenances), no connection to Oregon City's existing system shall be made until the new system has passed both pressure and bacteriological testing and has been accepted by the water division. All water used for flushing and testing shall be metered and delivered to the new waterline through a DWS-approved backflow prevention assembly. OCPW can provide a 2-inch DCVA. If a contractor provides the assembly, the assembly shall be tested by an Oregon-certified backflow tester and the tester shall provide a passing test report to an Oregon City Cross Connection Specialist for review prior to its use. Only Oregon City Water Division staff is authorized to operate water distribution system valves. Following acceptance of the new water main, final connection to the existing system shall be done under the supervision of Oregon City Water Division staff.

Type of Water Service

Domestic – backflow prevention is required on services that:

- are commercial in nature (includes multi-family dwellings),
- are greater than or equal to two-inches in diameter,
- have piping higher than 32 feet above the water main, or
- have a potential hazard to the public water supply, in the discretion of the Oregon City Water Division (includes new or existing wells).

Irrigation – backflow prevention is required on all irrigation systems.

Information on acceptable methods of backflow prevention for irrigation systems is available upon request and can be found here: <http://www.orcity.org/publicworks/cross-connection-backflow-prevention-program>. Annual assembly testing should be completed prior to the beginning of each irrigation season – July 31st at the latest.

Fire line – backflow prevention is required on all fire sprinkler systems except:

- single family residential fire protection systems using approved potable water pipe and materials, and
- allow for periodic flow through during each 24 hour period.

An approved DCDA or RPDA shall be installed on all non-residential fire sprinkler systems. The distance between the water main and the DCDA or RPDA shall be 40 feet or less.

Private fire hydrants – hydrants that dead-end 40 feet or more from the water main:

- require a DCDA or RPDA, to be installed at the owner’s property line.

During design of new water systems every effort should be made to loop water mains in order to prevent water quality issues arising from dead-end lines. Hydrant runs should be minimized by placing public fire hydrants on the same side of a street as the water main. Any hydrant with a run greater than 40 feet will be considered a private hydrant and require backflow prevention (DCDA or RPDA).

Backflow prevention assemblies will be installed at a location adjacent to the water meter or point of delivery. With approval of the Oregon City Water Division, the assembly may be installed immediately inside the building being served, but in all cases, before the first branch line leading off the service line.

Non-Compliance

Oregon City Water Division may deny or discontinue water service to any premises:


- where access for cross connection inspection is denied,
- where there is a failure to install a required assembly,
- when repairs to a failed assembly are not made within the established time period, or
- when required tests are not completed.

One “Annual Testing Due” reminder letter will be mailed to each account’s responsible party (generally the responsible party identified in Oregon City’s Utility Billing (UB) database) two weeks before the beginning of the month in which the backflow assembly testing is due. If a completed test report is not received at OCPW within 20 days after the end of the month due, the account will be considered non-compliant and subject to water shut-off.

The reminder letter will provide this link to DWS’s website where a public list of Backflow Assembly Testers can be found:

<http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/CrossConnection/Pages/publiclist.aspx>. A printed list of testers (Clackamas County only) will be made available upon request.

OCPW will coordinate with UB when taking action to discontinue water service for non-compliance with this policy. UB service charges for discontinuing water service shall apply. Water meters for new construction or irrigation will be locked off until required backflow prevention is installed and ready for testing.

Approved by  _____ Date 12-6-13
John M. Lewis, P.E.
Public Works Director