

RESOLUTION

Replacing Section XIII of the Rules and Regulations of the
Palatine Hill Water District in
Multnomah and Clackamas Counties, Oregon

SECTION XIII - CONTROL OF BACKFLOW AND CROSS-CONNECTIONS**A. Purpose.**

1. To protect the public potable water supply of the Palatine Hill Water District from the possibility of contamination or pollution by isolating within the users' private water systems such contaminants or pollutants which could backflow or back-siphon into the public water system.
2. To promote the elimination or control of existing or potential cross-connections between the users' private potable water system and any non-potable systems, plumbing fixtures and piping systems.
3. To provide for the maintenance of a continuing Program of Cross-Connection Control that will systematically and effectively prevent the contamination or pollution of all potable water systems by cross-connection.

B. Authority.

1. Pursuant to the Federal Safe Drinking Water Act of 1974 and the Oregon Administrative Rules, Chapter 333, the water purveyor has the primary responsibility for preventing water from unapproved sources, or any other substances, from entering the public potable water system.
2. The Rules and Regulations of the Palatine Hill Water District, adopted.

C. Responsibility.

The Board of Commissioners, through their designated agent, shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow of contaminant or pollutants through the users' water service connections. If in the judgment of the District's agent, an approved backflow prevention assembly is required (at the service connection to any users' premises; or within the users' private water system) for the safety of the public water system, the District's agent shall give notice in writing to said user to install such approved backflow prevention assembly(s) at a specific location(s) on his premises. The user shall immediately install such an approved assembly(s) at his own expense; and failure, refusal, or inability on the part of the user to install, have tested and maintained said assembly(s) shall constitute

grounds for discontinuing water service to the premises until such requirements have been satisfactorily met.

D. Definitions.

1. **Designated Agent.** The person delegated by the Board of Commissioners and invested with the authority and responsibility for the implementation of a cross-connection control program and for the enforcement of the provisions of this regulation.
2. **Approved.** The term "approved" as herein used in reference to a backflow prevention assembly or method shall mean an approval by the Oregon Health Division - Drinking Water Section.
3. **Auxiliary Water Supply.** Any water supply on or available to the premises other than the District's supply system.
4. **Backflow.** The undesirable flow of water or mixtures of water and other liquids, gases or other substances into the distribution pipes of the potable supply of water from any source other than its intended source.
5. **Back Pressure.** A condition in which the user's system pressure is greater than the District's supply pressure.
6. **Back Siphonage.** A form of backflow due to a negative or reduced pressure in the supply piping.
7. **Backflow Prevention.** An assembly or means designed to prevent backflow or back siphonage.
 - a. **Air Gap.** The physical vertical separation between the free-flowing discharge end of a potable water system pipeline and an open, or non-pressure, receiving vessel. Physically defined as a distance equal to twice the diameter of the supply pipe, but in no case less than 1 inch (2.54cm).
 - b. **Atmospheric Vacuum Breaker.** A device which prevents back-siphonage by creating an atmospheric vent when there is either a negative pressure or sub-atmospheric pressure in a water system.
 - c. **Pressure Vacuum Breaker.** A device containing one or two independently operated, spring-loaded check valves and an independently operated, spring-loaded air inlet valve located on the discharge side of the check valve(s). Device includes tightly closing shut-off valves on each side of the check valves(s) and properly located test cocks for the testing of the check valves.

- d. **Double Check Valve Assembly.** An assembly of two (2) independently operating spring loaded check valves with tightly closing, resilient-seated shut-off valves at each end of the assembly, plus properly located resilient-seated test cocks. This assembly shall be used only to protect against a non-health hazard (i.e. pollutant).
 - e. **Reduced Pressure Principle Backflow Prevention Assembly.** An assembly consisting of two (2) independently acting approved check valves with a hydraulically operating, mechanically independent, pressure differential relief valve located between the check valves and below the first check valve. The assembly shall include tightly closing resilient-seated shut-off valves at each end and properly located resilient seated test cocks. This device is designed to protect against both non-health (i.e. pollutant) or health (i.e. contaminant) hazards; but shall not be used for backflow protection of sewage or reclaimed water.
8. **Contamination.** An impairment of the quality of the water which creates an actual hazard to the public health through poisoning or through the spread of disease by sewage, industrial fluids, waste, etc. Defined as high hazard.
9. **Cross-Connection.** Any unprotected actual or potential physical connection between a public or a user's potable water system and any other source or system through which it is possible to introduce into the potable system any contamination or pollution.
- a. A "direct cross-connection" is a connection which is subject to both back siphonage and back pressure.
 - b. An "indirect cross-connection" is a connection which is subject to back siphonage only.
 - c. **Cross Connection - Controlled.** A connection between a potable water system and a non-potable water system with an approved backflow prevention device, properly installed and maintained so that it will continuously provide protection commensurate with the degree of hazard.
 - d. **Cross Connection Control by Containment.** A method of backflow prevention which requires the appropriate type or method of backflow protection at the water service entrance; generally the downstream or user's end of the water meter.
10. **Hazard, "Degree of"**
Either a pollutional (non-health) or contamination (health) hazard and the "degree" is derived from the evaluation of conditions within a system.

- a. **Hazard-Health.** An actual or potential threat of contamination of a physical or toxic nature, to the public potable water system or the user's potable water system that would be a danger to health.
 - b. **Hazard-Plumbing.** An internal or plumbing type cross-connection in a user's potable water system that may be either a pollutional or a contamination type hazard. This includes, but is not limited to, cross-connections to toilets, sinks, lavatories, wash trays and lawn sprinkling systems.
 - c. **Hazard-Pollutional.** An actual or potential threat to the physical properties of the water system or the potability of the public or users' potable water system, but which would not constitute a health or system hazard, as defined. Under this definition, the maximum degree of pollution to which the potable water system could be degraded would cause a nuisance, be aesthetically objectionable, or cause minor damage to the system or its appurtenances.
 - d. **Hazard-System.** An actual or potential threat of severe danger to the physical properties of the public or users' potable water system, or of a pollution or contamination which would have a protracted effect on the quality of the water in the system(s).
11. **Industrial Fluids.** Any fluid or solution which may be chemically, biologically, or otherwise contaminated or polluted in a form or concentration which would constitute a health, system pollutional or plumbing hazard if introduced into an approved water supply.
 12. **Pollution.** An impairment of the quality of the water to a degree which does not create a hazard to the public health but which does adversely and unreasonably affect the aesthetic qualities of the water for domestic use.
 13. **Water - Potable.** Any public water supply which has been investigated and approved by the Oregon Health Division for human consumption.
 14. **Water - Service Connection.** The point in the users' water system beyond the sanitary control of the District, generally considered to be the outlet end of the water meter.
 15. **Water - Used.** Any water supplied by the District after it has passed through the service connection.

E. **Requirements.**

1. **Water Systems.**

- a. **District's System.** The source facilities and the distribution system, including all those facilities under the complete control of the District up to the point where the users' system begins.
- b. **Source.** The connection to the supply main of the City of Portland Water Bureau, beginning at the downstream end of the Bureau's master meter.
- c. **Distribution System.** The pumping station, storage reservoirs and the network of piping used for the delivery of water from the source to the users' service connections.
- d. **User's System.** Those parts of the facilities beyond the downstream end of the users' water meter.

2. **Policy.**

- a. No service connection to any premise shall be installed or maintained by the District unless the supply is protected as required by the Oregon Health Division Rules and these Rules and Regulations. Service to any premise by the District shall be discontinued if a backflow prevention device required by these Rules and Regulations is not installed, tested and maintained; if it is found that a backflow prevention device has been removed or bypassed; or if an unprotected cross-connection exists on the premises. Service will not be restored until such conditions or defects are corrected.
- b. The user's system shall be open at all reasonable times to authorized representatives of the District to determine whether unprotected cross-connections, sanitary hazards, or other violations of these regulations exist. When such a condition becomes known, the District's authorized representative shall deny or immediately terminate service to the premises until the user has corrected the condition(s) in conformance with Oregon Health Division Rules relating to plumbing and water supplies.
- c. An approved backflow prevention device shall also be installed on each service line to a user's water system at the outlet end of the water meter wherever any of the following conditions is found to exist:
 - (1). In case of a premise having an auxiliary water supply which is not approved as an additional source by the Oregon Health Division, the District's system shall be protected against backflow by the

installation of an approved backflow prevention device immediately downstream of the meter, commensurate with the degree of hazard.

- (2). In the case of premises on which any industrial fluids or other objectionable substances are handled in such a manner as to create an actual or potential hazard to the public water system, the District system shall be protected against backflow by the installation of an approved backflow prevention device at the service connection. This requirement shall also include waters originating from the District System which have been subject to deterioration in quality.
- (3). In the case of premises having (a) internal cross-connections which cannot be permanently corrected or protected against, or (b) intricate plumbing and piping arrangements; or where entry to all portions of the premises is not readily accessible for inspection purposes, making it impracticable or impossible to ascertain whether or not dangerous cross-connections exist, an approved backflow prevention device shall be installed at the service connection.
- (4). The type of protective device required under subsections 2c (1), (2) and (3) shall depend upon the degree of hazard which exists, as follows:
 - (a). In the case of any premise where there is an auxiliary water supply, as stated in Subsection 2c (1) of this section, the District water system shall be protected by an approved reduced pressure principle backflow prevention assembly.
 - (b). In the case of any premise where there is water or a substance that would be objectionable, but not hazardous to health, if introduced into the public water system, the District system shall be protected by an approved double check valve backflow prevention assembly.
 - (c). In the case of any premise where there is any material dangerous to health which is handled in a manner as to create an actual or potential hazard to the public water system, the District system shall be protected by an approved reduced pressure backflow prevention assembly.
 - (d). In the case of any premise where there are unprotected cross-connections either actual or potential, the District system shall be protected by an approved reduced pressure principle backflow prevention assembly at the service's connection.

(e). In the case of any premise where, because of security requirements or other restrictions, it is impossible to make a complete cross-connection survey, the District system shall be protected by an approved reduced pressure principle backflow prevention assembly on each service connection.

- d. Any backflow prevention assembly required herein shall be of make, model, and size approved by the Oregon Health Division. The term "Approved Backflow Prevention Assembly" shall mean an assembly that has been manufactured in full conformance with the standards established by the American Water Works Association, entitled AWWA/ANSI C510-92, Standard for Double Check Valve Principle Backflow Prevention Assemblies, or AWWA/ANSI C511-92, Standard for Reduced Pressure Principle Backflow Prevention Assemblies; and have met completely the laboratory and field performance specifications of the Foundation for Cross-Connection Control and Hydraulic Research of the University of Southern California (USC FCCCHR) established in: Specifications of Backflow Prevention Assemblies, Section 10 of the most current edition of the "Manual of Cross-Connection Control".

Said AWWA and USC FCCCHR standards and specifications have been adopted by the Oregon Health Division. Final approval shall be evidenced by the "Certificate of Compliance" for the said AWWA Standards; and "Certificate of Approval" for the said USC FCCCHR Specifications; issued by an approved testing laboratory.

The following testing laboratory has been qualified by the Oregon Health Division to test and approve backflow prevention assemblies:

Foundation for Cross-Connection Control and Hydraulic Research
University of Southern California
KAP-200 University Park MC-2531
Los Angeles, California 90089-2531

Testing laboratories other than the laboratory listed above will be added to an approved list as they are qualified by the Oregon Health Division. Backflow preventers which have been fully tested and have been granted a Certificate of Approval by said qualified laboratory and are on its current list of approved backflow prevention assemblies may be used without future qualification.

- e. It shall be the responsibility of the user at any premise where a backflow prevention assembly is installed, to have the device tested by a certified tester upon installation and at least once per year thereafter. In those

instances where the District's agent deems the hazard to be great enough, he may require field tests of more frequent intervals. All tests shall be at the expense of the water user and shall be performed by a tester certified by the Oregon Health Division. It shall be the duty of the District's agent to ensure that these test are made in a timely manner and the user shall notify the District in advance when the test are to be undertaken so that an official representative may be present, if so desired. Backflow prevention assemblies shall be repaired or replaced at the expense of the water user whenever they are found to be defective. Record of such test, repair or replacements shall be kept and made available to the District.

- f. All existing backflow prevention assemblies which do not meet the requirements of this section but were approved devices for the purpose described herein at the time of installation, and which have been properly maintained, shall be excluded from the requirements of these rules, except for the testing and maintenance requirements under subsection C 2.e, provided that the District's agent is assured that they will satisfactorily protect the District system.

Whenever the existing device is moved from its present location, requires more than minimum maintenance, or when the District's agent finds that it constitutes a hazard to health, the unit shall be replaced by an approved backflow prevention assembly meeting the requirements of this section.

- g. The Board of Commissioners is authorized to make all necessary and reasonable rules and policies with respect to the enforcement of the requirements of this Rule.