

**SECURITY WATER DISTRICT**

**Water Service Quality Control Regulations**

Adopted January 16, 1991

THESE CROSS CONNECTION CONTROL REGULATIONS  
WERE APPROVED BY THE BOARD OF DIRECTORS,  
SECURITY WATER DISTRICT ON JANUARY 16, 1991  
AND ARE EFFECTIVE IMMEDIATELY.

ROBERT T. SCHRADER  
Manager  
Security Water District

## **SECURITY WATER DISTRICT**

### **CROSS CONNECTION CONTROL REGULATIONS**

This document is adopted by Security Water District to promote and sustain the high quality of drinking water furnished to customers of the Security Water District; to protect the public potable water supply system of Security from the possibility of contamination or pollution by backflow, backsiphonage or backpressure; to promote the elimination of control of existing cross connections, actual or potential; and to provide for the maintenance of a continuing program of cross connection control.

Any situation or circumstances arising as a result of this Regulation which is not fully outlined herein will be resolved by the Security Water District Manager.

**SECURITY WATER DISTRICT**  
**CROSS CONNECTION CONTROL REGULATIONS**  
**INDEX**

	Section
Authority	1.0
Reference Manuals	2.0
General Requirements	3.0
Standards	4.0
Installations	5.0
Testing and Maintenance	6.0
Right of Entry	7.0
Violations	8.0
Criteria List	9.0
Approved Device Lists	10.0
Drawings	11.0

**SECURITY WATER DISTRICT**  
**CROSS CONNECTION CONTROL REGULATIONS**

- 1.0 THE AUTHORITY TO IMPLEMENT AND MAINTAIN THIS PROGRAM ON CROSS CONNECTION CONTROL IS CONTAINED IN THE FOLLOWING LEGISLATIVE ACTIONS:
- 1.1 Colorado Department of Health Law C.R.S. 1973 Title 25-1-114, 25-2-114.1.
  - 1.2 Colorado Primary Drinking Water Regulations, Section 11.1.2 (Hazardous Cross Connections).
  - 1.3 Cross Connection Control, Colorado Department of Health, 1988.
  - 1.4 Occupational Safety and Health Administration Federal Register #202 part 2, page 22234, subparts J.
  - 1.5 U.S. Environmental Protection Agency, Cross Connection Control Manual (1973) E.P.A. – 43070-73-002, Section 3.
  - 1.6 Uniform Plumbing Code of the International Plumbing and Mechanical Officials, Chapter 10, Section 1001, 1002 and 1003.2.0.

## 2.0 REFERENCE MANUALS ADOPTED FOR GUIDELINES ON CROSS CONNECTION CONTROL

- 2.1 Manual of Cross Connection Control, Foundation for Cross Connection Control and Hydraulic Research, University of California.
- 2.2 Cross Connection Control, Colorado Department of Health.
- 2.3 Cross Connection Control Committee, Pacific Northwest Section, AWWA Manual of Accepted Procedures and Practices.
- 2.4 Recommended Practice for Backflow Prevention and Cross Connection Control, AWWA Manual M-14.
- 2.5 Definitions of terms used in this regulation are those contained in “Colorado Department of Health Cross Connection Manual”. Available for review at 231 Security Boulevard.

## 3.0 GENERAL REQUIREMENTS

- 3.1 Building plans submitted to the Regional Building Department will be reviewed by the Security Water District Manager and approved prior to issuance of a building permit. Building plans must show:
  - a. Water Service size and location.
  - b. Meter size and location.
  - c. Backflow prevention device size, type and location.
  - d. Fire sprinkling system(s) service line, size and type of backflow prevention device.
- 3.2 Backflow prevention devices are to be installed in an accessible location to facilitate maintenance, testing and repair. Drawings 1 through 10 show various installations.
- 3.3 All backflow prevention devices shall be installed immediately downstream of the water meter.
- 3.4 Before installing the backflow prevention device, pipelines should be thoroughly flushed to remove foreign material.
- 3.5 In no case will it be permissible to have connections or tees between the meter and service line backflow prevention device.
- 3.6 In no case is it permissible to connect the relief valve discharge on reduced pressure devices into a sump, sewer, drainage ditch, etc.
- 3.7 Backflow prevention valves are not to be used for the inlet or outlet valve of the water meter. Test cocks are not to be used as supply connections and should be plugged except when testing.

- 3.8 In order to ensure the backflow prevention devices continue to operate satisfactorily, it will be necessary that they be tested at the time of installation and on an annual schedule thereafter. Such tests will be conducted in accordance with the F.C.C. and H.R. performance standards and field test procedures as directed by the Colorado Department of Health and Security Water District. Annual tests will be conducted during the month of June unless otherwise approved by Security Water District Manager. Security Water District will provide appropriate forms upon request. See Section 6 of this Regulation.
- 3.9 Security Water District will inspect all installations at no cost to the owner.
- 3.10 All costs for design, installation, maintenance, repair and testing are to be borne by the customer.
- 3.11 No grandfather clause exists. All laws and regulations apply to new as well as existing structures.
- 3.12 All fire sprinkling lines shall have a minimum protection of an approved **Reduced Pressure Principle Device** for containment of the system.
- 3.12.1 All glycol or antifreeze systems shall have a **Reduced Pressure Principle Backflow Prevention Device**.
- 3.12.2 Dry fire systems shall have an approved Reduced Pressure Principle Backflow device installed upstream of the air pressure valve.
- 3.12.3 Single family **residences** with a fire sprinkler system and domestic water system combined shall have a Reduced Pressure Principle Device.
- 3.13 Underground fire sprinkler systems not having a fire hydrant attached shall be inspected from the main to the riser flange including the backflow device by Security Water District. This inspection shall include, but not be limited to: All anchors, supports, materials and appurtenances from the water main through the backflow prevention device.
- 3.14 All underground fire sprinkler systems shall conform to the following sections of the National Fire Protection Association pamphlets numbers thirteen and twenty-four; Pamphlet number thirteen, sections 1-11.2 hydrostatic treating, and section 1-1.2.2 allowable leakage, Pamphlet number twenty-four, private fire service mains and their appurtenances sections 8.4, 8.5, 8.6, 8.7 and 8.8.

#### 4.0 STANDARDS FOR BACKFLOW PREVENTION DEVICES

- 4.1 Any backflow prevention device required herein shall be of a model and size approved by the Security Water District Manager. The term “Approved Backflow Prevention Device” shall mean a device that has been manufactured in full conformance with the standards established by the American Water Works Association entitled: AWWA C506-78 Standards for Reduced Pressure Principle Device or current edition, and have met completely the laboratory and field performance specifications of the Foundation for Cross Connection Control and Hydraulic Research (FCC & HR) of the University of Southern California Established by: Specifications of Backflow Prevention Devices, 7<sup>th</sup> Edition, August, 1985 or latest edition.

AWWA and FCC & HR standards and specifications have been adopted by Security Water District. Final approval shall be evidenced by a “Certificate of Approval” issued by an approved testing laboratory certifying full compliance with said AWWA standards and FCC & HR specifications. The following testing laboratory is qualified to test and certify backflow prevention devices:

Foundation for Cross Connection Control and Hydraulic Research,  
University of Southern California,  
OHE 430-D University Park-MC 1453  
Los Angeles, California 90089-1453

- 4.2 Only approved backflow prevention devices shall be used. See Section 10 of these Regulations for approved device list.
- 4.3 Backflow prevention devices currently installed which are not approved shall be replaced with an approved device within three (3) years of adoption of this Regulation unless the backflow prevention device fails an annual operational test. If the device fails any such test, it shall be replaced immediately with an approved device.
- 4.4 Backflow prevention devices used on fire lines shall have O.S. & Y Valves and be listed by the National Fire Protection Association.



## 5.0 INSTALLATIONS

- 5.1 Backflow prevention devices shall be installed in accordance with drawings 1 through 10.
- 5.2 Backflow prevention device installations shall be inspected and approved for use by Security Water District. Inspections can be scheduled by calling 392-3475 at least 24 hours in advance of the desired inspection time.
- 5.2 All backflow prevention devices shall be installed in the horizontal position, variance by review only on retrofit systems. No Reduced Pressure Principle type backflow devices shall be installed above water meters.
- 5.4 A pressure vacuum breaker will be used only where the device is never subject to back-pressure and installed a minimum of twelve (12) inches above the highest piping or outlet downstream of the device in a manner to preclude back-pressure.
- 5.5 An atmospheric vacuum breaker shall be used only where the device is:
  - a. Never subjected to continuous pressure (more than 12 hours continuous).
  - b. Installed with the air inlet in a level position and a minimum of six (6) inches above the highest piping or outlet it is protecting.
  - c. No valves shall be permitted downstream of the device.
- 5.6 The single check valve is not considered to be a backflow prevention device.
- 5.7 Double check valve assemblies may be installed in below-grade vaults when these faults are properly constructed in accordance with Drawings 1 through 10.
- 5.8 Reduced Pressure Principle backflow preventers will be installed above ground. The unit should be placed at least twelve (12) inches above the finish grade to allow clearance for repair work. A concrete slab at finish grade is recommended. Proper drainage should be provided for the relief valve and may be piped away from the location, provided it is readily visible from above grade and the relief valve is separated from the drain line by a minimum of double the diameter of the supply line. A modified vault installation may be used if constructed with ample side clearance. Freezing is a major problem in this area. Precautions should be taken to protect above-ground installations.
- 5.9 Reduced Pressure Principle backflow preventers may be installed in a basement provided with an adequate drain with an effective opening of twice the diameter of the device. See flow chart drawing 11.

## 6.0 TESTING AND MAINTENANCE

- 6.1 At least once per year it will be the responsibility of the customer/user at any premises where any backflow prevention devices are installed to have a certified test made of each device. In those specific instances where the Security Water District Manager deems the hazard to be great enough, he will require certified inspections at more frequent intervals. These tests shall be at the expense of the water user and shall be performed by a Certified Technician approved by the Colorado Department of Health and Security Water District or Water Distribution and Wastewater Collection System Certification Council. Annual tests will be conducted during the month of June unless otherwise approved by the Security Water District Manager.
- 6.1.1 Any device which has been successfully tested for any reason within 90 days previous to the annual June test period will be considered to have passed the annual test for that year.
- 6.1.2 On approximately May 1 of each year, customer/user will be notified in writing of the requirement for the annual test during June of that year. Failure to have the test completed by the end of June will make the customer/user liable for an administrative fee in an amount to be determined by the security Water District Board of Directors.
- 6.1.3 A copy of all test results will be furnished to Security Water District. This includes test results on any device(s) found to be defective during the annual test.
- 6.2 As necessary, the device(s) shall be paired or replaced at the expense of the customer/user whenever the device(s) are found to be defective. This action shall be accomplished within 30 calendar days after devices are found to be defective. Records or copies of same, of all such tests, repairs or replacement shall be kept with a copy of each furnished to Security Water District.
- 6.3 All testing gauges shall be checked for accuracy and be kept in good operating condition.
- 6.4 Security Water District retains the right to test or otherwise check the installation and operation of any Backflow Prevention Device.

## 7.0 RIGHT OF ENTRY

The Water District representative assigned to inspect premises relative to possible hazards shall carry proper credentials of his or her office, upon exhibit of which he or she shall have the right of entry during usual business hours to inspect any and all buildings and premises for cross connections I the performance of his or her duties.

This right of entry shall be a condition of water service in order to provide assurance that the health, safety and welfare of the people throughout the Security Water District **are** protected. Where building security is required, the backflow prevention devices should be located in an area not subject to security. Questions regarding proper credentials should be directed to Security Water District, 392-3475.

## 8.0 VIOLATIONS

- 8.1 Failure of the customer to cooperate in the installation, maintenance, testing or inspection of backflow prevention devices required by this regulation shall be grounds for the discontinuance of water service to the premises or the requirement for an air-gap separation from the public potable water supply.
- 8.2 Service of water to any premises may be discontinued by the Security Water District after written notification if unprotected cross connections exist on the premises or if any defect is found in an installed backflow prevention device, or if a backflow prevention device has been removed or bypassed. Service shall not be restored until such conditions or defects have been corrected.
- 8.3 Discontinuance of service may be summary, immediate and without written notice whenever, in the judgement of the Security Water District Manager, such action is necessary to protect the purity of the public potable water supply or the safety of the water system.

## 9.0 CRITERIA LIST

- 9.1 All new commercial establishments, regardless of occupancy, will require protection via a Reduced Pressure Principle Backflow prevention device.
- 9.2 Any change of occupancy in existing commercial establishments, which are presently protected by a Double Check Valve assembly, may require installation of a Reduced Pressure Principle Backflow prevention device. These cases shall be considered individually at the discretion of the Security Water District Manager or his representative.
- 9.3 Any existing Double Check Valve assemblies in any establishments which require replacement for any reason, i.e. malfunction, remodeling, etc., will be replaced by a Reduced Pressure Principle backflow prevention device.
- 9.3.1 Any renovation/modification required to ensure adequate drainage for a Reduced Pressure Principle device as required by Paragraph 5.9 of this regulation will be the responsibility of the owner/user.
- 9.4 All irrigation systems will require protection via a Reduced Pressure Principle device or a Pressure Vacuum Breaker device.
- 9.5 Any existing backflow prevention device on an irrigation system which cannot be tested and requires replacement for any reason will be replaced by an approved device with test cocks which can be tested on an annual basis.
- 9.6 All fire sprinkling lines shall have a minimum protection of an approved Reduced Pressure Principle device for containment of the system.
- 9.7 Any system with antifreeze shall have an approved Reduced Pressure Principle backflow device.
- 9.8 Dry fire systems shall have an approved Reduced Pressure Principle device installed upstream of the air pressure valve.
- 9.9 Single family residents with a fire sprinkler system and domestic water system combined shall have a Reduced Pressure Principle device.
- 9.10 Any establishment zones as a single-family residence but used as a commercial enterprise shall have a Reduced Pressure Principle backflow prevention device. In the event that the establishment reverts to a single-family residence only, the device may be removed upon approval by the Security Water District Manager. However, should the device be retained, maintenance and testing will be required as outlined in this regulation.
- 9.11 All mobile equipment (landscape, lawn or tree spraying, water hauling, etc.) will require protection via Air Gaps and/or a Reduced Pressure Principle device. Variance by review and approval by the Security Water District Manager only.

## 10.0 APPROVED DEVICE LISTS