

**CROSS-CONNECTION CONTROL PROGRAM**

**FOR**

**CITY OF REDDING**

**Under the Direction of  
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**Article 1.00 Purpose**

This document outlines the Cross-Connection Control Program implemented by the City of Redding which has the twofold purpose of protecting the City's potable water supply against actual or potential contamination through cross-connection and backflow and eliminating existing, unknown cross-connections through a City wide Hazard Assessment program.

**Article 2.00 Scope**

The City's Cross-Connection Control Program, per the City of Redding's Municipal Code, Title 14.08 Water, Section 14.08.160 Cross-Connection Control Program, is made up of the following elements to ensure compliance with the California Code of Regulations, Title 17, Public Health, Sections 7583 through 7605.

- Operating instructions for implementing the Cross-Connection Control Program.
- Performance of surveys to identify water user locations where cross-connections are likely to occur.
- Installation of backflow protection by the water user at the user's

connection.

- Training and experience of personnel delegated to implement the cross-connection control program.
- Approved test procedures for testing backflow prevention assemblies to ensure backflow protection.
- Maintenance of records of locations, tests, and repair of backflow prevention assemblies.

### **Article 3.00      Administration and Authority**

The City of Redding's Cross-Connection Control Program is administered through the Water Utility under the direction of the Water Utility Supervisor - Distribution. This position has formal oversight of the program under the direction of the California Department of Health Services, Drinking Water Division, Title 17, Article 1, Section 7584, and the City of Redding's Municipal Code, Title 14, Section 14.08.160 Cross-Connection Control Program. The day-to-day management of the program has been delegated to the Cross-Connection Control Program - Specialist. The City of Redding Building Department and Fire Department will work with the Water Utility to ensure that appropriate external assemblies are installed on all new construction projects and tenant improvements.

The authority for the Cross-Connection Control Program is with the Federal Safe Drinking Water Act Amendments of 1996, the California Health and Safety Code, Section 11680, the California Code of Regulations, Title 17, Sections 7583 - 7605, and the City of Redding Municipal Code, Chapter 14.08, Section 14.08.040, and the Uniform Plumbing Code, Chapter 6, Water Supply and Distribution.

### **Article 3.50      Responsibility**

Under the rules of Title 17, Article 1, Section 7584 (Responsibility and scope of program), and the City of Redding's Municipal Code, Title 14, Section 14.08.160, the water supplier shall protect the public water supply

from contamination by implementation of a cross-connection control program

The City of Redding Water Utility, Distribution and Treatment, are responsible for the prevention of contamination and pollution of the City's water system. Such responsibility begins at the point of origin of the City's water supply and includes adequate treatment facilities and water mains, and ends at the point of connection to the customer's water service. The City Water Utility will insure adequate backflow and back-siphonage protection is maintained on customer water systems directly connected to the City's water distribution system.

The City will not be responsible, per the City of Redding's Municipal Code Chapter 14.08, Section 14.08.230, for any loss or damage directly or indirectly resulting from or caused by any improper or negligent installation, operation, use, repair, or maintenance of, or interfering with, any approved backflow prevention assembly, required by this program, by any customer or any other person.

The customer will bear all costs for the installation of pumps or renovation of existing customer piping, as a result of any decreases in line pressure attributed to the upgrading of existing backflow prevention assemblies or the installation of approved backflow prevention assemblies.

The City will not be held responsible for any losses or damages incurred by the consumer as a result of upgrading existing backflow prevention assemblies or the installation of approved backflow prevention assemblies.

#### **Article 4.00      Definitions**

The following definitions describe those terms and phrases that are pertinent to the City of Redding Cross-Connection Control Program.

##### **4.02 Approved backflow prevention assemblies**

Assemblies which have passed laboratory and field evaluation tests

performed by a recognized testing organization which has demonstrated their competency to perform such tests to the California Department of Health Services.

#### **4.03 Approved water supply**

A water source that has been approved by the California Department of Health Services for domestic use and designated as such in a domestic water supply permit.

#### **4.04 Auxiliary water supply**

Any water source that is either used, or equipped to be used, as a water supply and located on, or piped to, the premises of a water user. The term equipped means that appurtenances such as inactive wells, pumps, power supply, intakes, suction lines, pipelines, connection fittings, or storage tanks are in place and readily available for use.

#### **4.05 AWWA**

American Water Works Association

#### **4.06 Backflow**

A flow condition caused by a differential in pressure that causes the flow of water or other liquid, gases, mixtures or substances to flow back into the water distribution system of a potable supply from any source or sources other than an approved water supply source.

Back siphonage is one cause of backflow and is caused by negative or reduced pressure in the water distribution system. This scenario is called an indirect cross connection.

Back pressure is the other cause. Back pressure is defined as a higher pressure than the water distribution system, caused by a pump, elevated storage, fire suppression equipment, or any other means. This scenario is called a direct cross connection.

#### **4.07 Certified Tester**

A person who has proven their competency in testing, repair, and making

test reports on approved backflow prevention assemblies to the satisfaction of the City Water Utility Supervisor - Distribution. Individuals are typically licensed through the American Backflow Prevention Association or California-Nevada Section of the American Water Works Association, or the program administered by the University of Southern California.

#### **4.08 City**

City of Redding

#### **4.09 Contamination**

Degradation of the quality of the potable water by any foreign substance which creates a hazard to the public health or which may impair the usefulness or quality of the water.

#### **4.10 Cross-connection**

The term as used in this document means any unprotected actual or potential connection between a potable water system used to supply water for drinking purposes and any source or system containing unapproved water or a substance that is not or cannot be approved as safe, wholesome, and potable. Bypass arrangements, jumper connections, removable sections, swivel or changeover devices, or other devices through which backflow could occur shall be considered to be cross-connections.

#### **4.11 Cross-Connection Control Program Specialist**

A person certified as a Cross Connection Control Program Specialist by the California-Nevada Section of the American Water Works Association or an organization with equivalent certification requirements.

#### **4.12 Critical Services**

Water services that cannot be shut off, even for a few moments, at any time.

#### **4.13 Customer**

The owner or operator of a business or residential property.

#### **4.14 Degree of hazard**

Determined from an evaluation of conditions upon the customers premises and are classified as either a pollution (non-health) or contamination (health) hazard.

#### **4.15 Department**

The California Department of Health Services.

#### **4.16 Health hazard**

An actual or potential threat of contamination of a physical or toxic nature to the City of Redding water system.

#### **4.17 Non-domestic irrigation**

Use of the public water system for any irrigation other than domestic irrigation or any irrigation system into which fertilizers, herbicides, or pesticides are, or can be, injected.

#### **4.18 Person**

An individual, corporation, company, association, partnership, municipality, public utility, or other public body or institution.

#### **4.19 Point of connection**

The most downstream point of the water service where the City's responsibility and liability stops. Also known as the point where the City no longer can control the potability of the water.

#### **4.20 Pollution**

Impairment of water quality to a degree that does not create a hazard to the public health, but does adversely and unreasonably affect the aesthetic qualities of such waters for domestic use.

#### **4.21 Potable water**

Any water which, according to the California Department of Health Service's regulations, is safe for human consumption

#### **4.22 Premises**

Any and all areas on a customer's property which are served or have potential to be served by the City water distribution system.

#### **4.23 Public water system**

A water distribution system that provides for the piping of water to the public for human consumption that has five or more service connections or regularly serves an average of 25 individuals daily at least 60 days out of the year.

#### **4.24 Reclaimed water**

The term "reclaimed water" means a wastewater which, as a result of treatment, is suitable for uses other than potable use.

#### **4.25 Service connection**

Pipeline, angle meter stop, meter box, and meter used to extend water service from a City water distribution main to the premises.

#### **4.26 Title 17**

State of California Administrative Code, Title 17 - Public Health

#### **4.27 USC Foundation**

The University of Southern California Foundation for Cross-Connection Control and Hydraulic Research

#### **4.28 Water supplier**

The entity who owns or operates the approved water supply system. As cited in this document shall mean the City of Redding.

#### **4.29 Water user**

Any person obtaining water from the City of Redding water distribution system and related appurtenances.

### **Article 5.00      Operating Instructions for Implementing the Cross-Connection Control Program**

## 5.10 New Construction and Improvement Construction

All applications for new water service, or modification to premises with existing water service(s) are processed through the City's Development Services Department Land Development/Permit Center.

Based upon the information submitted on the application, the following City Cross-Connection Control Program requirements will be enforced on all new construction:

- Commercial fire sprinkler systems:
  - Type: Reduced Pressure Principle Detector Assembly (RPPDA)
  - \* Required if chemical additives are introduced into the system
  - Type: Double Check Detector Assembly
  
- Residential fire sprinkler systems:
  - Type: none required if metered and connected to a water closet, a looped system.
  
  - \* RPP required if chemical additives are introduced into the system
  - \* RPP required if closed system
  
- Commercial water service
  - Type: Reduced Pressure Principle Assembly (RPP)
  
- Irrigation (non-domestic)
  - Type: Reduced Pressure Principle Assembly (RPP)
  - Type: Pressure Vacuum Breaker

(PVB) in medium strips only

Irrigation (domestic)

Type: Pressure Vacuum Breaker (PVB)

Type: Reduced Pressure Principal Assembly (RPP)

- Agricultural

Type: Reduced Pressure Principle Assembly (RPP)

- Domestic (with well)

Type: Double Check Assembly (DC)

RPP recommended

Improvement construction applications that are either commercial in nature, or propose to change onsite historical water uses will require an onsite hazard assessment performed by the City's Cross Connection Control Program Specialist. After review, if it is determined that a backflow prevention assembly is required, the City's Construction Standard for the installation of the required backflow prevention assembly and a list of City approved certified backflow prevention assembly testers will be provided to the customer.

### **5.11 Hazard Assessment**

Through the process of performing surveys to identify water user locations where cross-connections are likely to occur if it is determined that an actual or potential cross-connection or backflow condition is present in an existing facility, the installation of an approved backflow prevention assembly commensurate with the actual or potential hazard will be required. Upon written notification the customer shall within a prescribed time period install an approved device or devices at their own expense. Failure, refusal, or inability on the part of the customer to install the device or devices within this prescribed time period shall result in the termination of water service to the premises until such time the device or devices is/are properly installed and tested.

In the event that an existing backflow prevention assembly already installed does not comply with the current installation requirements or meet the appropriate level of protection as required by the Cross-Connection Control Program, then at the discretion of the Water Utility Supervisor - Distribution, the installation of the assembly shall be changed to one that is approved and commensurate with the degree of hazard as required by the policy.

A letter of confirmation will be sent to the affected customer informing them of their responsibility to correct, install, or upgrade an existing backflow prevention assembly to resolve an actual or potential backflow or cross-connection condition.

### **5.12 Conditions Requiring a Backflow Prevention Assembly**

An approved backflow prevention assembly shall be installed wherever the following conditions exist, per California Department of Health Services, Title 17, Chapter 4, Section 7585, City of Redding Municipal Code, Chapter 14.08, Section 14.08.160, Item 7, d, Uniform Plumbing Code, Chapter 6, Section 603.0:

- In the case of premises having an auxiliary water supply, the City's water system shall be protected against backflow from the premises by installing a backflow prevention assembly commensurate with the degree of hazard.
- In the case of premises on which any industrial fluids or any other objectionable substance is handled in such a fashion as to create an actual or potential hazard to the City's water system, the water system shall be protected against backflow from the premises by installing a backflow prevention assembly commensurate with the degree of hazard. This shall include the handling of process water and waters originating from the City water system which have been subjected to deterioration in quality.
- In the case of premises having (1) internal cross-connections that cannot be permanently corrected and controlled, (2) intricate

plumbing and piping arrangements, or (3) where entry to all portions of the premises is not readily accessible for inspection purposes, making it impractical or impossible to ascertain whether or not dangerous cross-connections exist, the City water system shall be protected against backflow from the premises by installing a reduced pressure principle device.

### **5.13 Type of Backflow Protection Required**

The type of protection that shall be provided to prevent backflow into the City water supply shall be commensurate with the actual or potential degree of hazard that exists on the customer's premises. The type of backflow prevention assembly that may be required (listed in an increasing level of protection) includes:

Pressure Vacuum Breaker (PVB)

Double-check Valve Assembly (DC)

Reduced Pressure Principle Assembly (RPP)

Air-Gap Separation (AG)

The minimum types of backflow protection required to protect the City water supply at the customer's connection to premises with various degrees of hazard are listed in Section 5.14. Situations which are not covered in Section 5.14 shall be evaluated on a case-by-case basis and appropriate backflow protection determined by the Cross-Connection Control Program Specialist, under supervision of the Water Utility Supervisor - Distribution.

### **5.14 Degree and Minimum Type of Backflow Protection Required**

- Premises where the City water system is connected to a recycled water supply system. Type: AG
- Premises where reclaimed water is used and there is no interconnection with the City water system. Type: RPP

- Premises where there are wastewater pumping and/or treatment plants and there is no interconnection with the City water system. This does not include a single family residence that has a sewage lift pump. Type: RPP
- Premises where hazardous substances are handled in any manner in which the substances may enter the City water system. This does not include a single family residence that has a sewage lift pump. Type: RPP
- Premises where the irrigation system is directly supplied from the City water system into which fertilizers, herbicides, or pesticides are, or can be, injected. Type: RPP
- Roadway right-of-way irrigation system interconnected to a piping system connected to the City water distribution system, and there is no potential for back pressure. Type: PVB
- Premises where the City distribution water pressure is used to inject industrial chemicals. Type: AG
- Premises where there is an unapproved auxiliary water supply which is interconnected with the City water system. Type: RPP
- Premises where there is an unapproved auxiliary water supply and there are no interconnections with the City's water system. Type RPP
- Premises where entry is restricted to the degree that inspections for cross-connections cannot be made with sufficient frequency or upon short notice to assure that cross-connections do not exist. Type: RPP

- Premises where there is a repeated history of cross-connections being established or re-established. Type: RPP

### **5.15 Fire Protection Systems**

Reduced Pressure Principal Detector Assemblies shall be installed on all new fire protection systems and on existing systems with antifreeze contents and the following conditions per the City of Redding's Construction Standards Section IV, Pages 422.01 through 422.30, and the City of Redding's Municipal Code, Title 14, Section 14.08.370., California Fire Code, Chapter 9, Section 912.5, State Health and Safety Code, Section 13114.7., Uniform Plumbing Code, Chapter 6, Section 603.4.16.

- Premises where the fire system is directly supplied from the public water system and there is an unapproved auxiliary water supply on or to the premise. (Not interconnected). Type:RPP
- Premises where the fire system is supplied from the public water system and interconnected with an unapproved auxiliary water supply. An RPP may be provided in lieu of an AG, if approved by the health agency and water supplier. Type: AG
- Premises where the fire system is supplied from the public water system and where either elevated storage tanks or fire pumps which take suction from private reservoirs or tanks are used. Type: RPP
- Premises where the fire system is supplied from the public water system and where recycled water is used in a separate piping system within the same building. Type: RPP

### **5.16 Inspection of Premises Where Cross-Connections May Exist**

The customer's premises shall be open for inspection at all reasonable times to authorized representatives of the City's Water Utility to determine whether cross-connections or other sanitary hazards exist. When such a condition is identified, the Cross-Connection Control Program Specialist under supervision of the Water Utility Supervisor - Distribution may deny or immediately discontinue water service to the customer's premises by providing for a physical breach in the water service line until the customer has corrected the condition(s) in conformance with Title 17, Uniform Plumbing Code and the City of Redding's Municipal Code, Title 14, Chapter 14.08, Section 14.08.160.

Each customer's premises requiring a backflow prevention assembly will be notified in accordance with Section 5.26. The customer will be informed of their responsibility to provide backflow protection and the type of backflow prevention assembly required in accordance with the City of Redding's Municipal Code, Title 14, Chapter 14.08.160, Section 1453., City of Redding's Construction Standards, Section IV, Pages 422.01 through 431.10., Federal Safe Drinking Water Act amendments, 1986., State of California Title 17, Public Health and Safety, Sections 7583 - 7605., Uniform Plumbing Code, Chapter 6, Section 603.0.

### **5.17 Installation of Backflow Protection by the Water User at the User's Connection**

Backflow prevention assemblies shall be installed in accordance with Section 7603, Title 17, of the California Administrative Code of Regulations and the City of Redding's Construction Standards, Section IV, Pages 422.01 through 143.10.

### **5.18 Air-Gap Separation (AG)**

The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other device and the flood level rim of said vessel. An approved air-gap shall be at least double the diameter of the supply pipe, measured vertically, above the top of the rim of the vessel, and in no case less than one

inch.

### **5.19 Reduced Pressure Principle Assembly (RPP)**

An assembly of two independently operating approved check valves with an automatically operating differential relief valve between the two check valves, tightly closing shut-off valves on either side of the check valves, plus properly located test ports for the testing of the check and relief valves. The device shall operate to maintain the pressure in the zone between the two check valves at a pressure less than the pressure on the public water supply side of the device. At cessation of normal flow, the pressure between the two check valves shall be less than the pressure on the public water supply side of the device. In case of leakage of either of the check valves, the differential relief valve shall operate to maintain the reduced pressure in the zone between the check valves by discharging to the atmosphere. When the inlet pressure is two pounds per square inch or less, the relief valve shall open to the atmosphere. In no case shall a cut, tee, or tap be made between the user's service connection at water meter and the backflow prevention assembly.

### **5.20 Double-Check Valve Assembly (DC)**

An assembly of two independently operating approved check valves with tightly closing shut-off valves on each side of the check valve, plus properly located test ports for the testing of each check valve. Double-check valve assemblies are used in low hazard situations.

In no case shall a cut, tee, or tap be made between the user's service An assembly of two independently operating approved check valves with tightly closing shut-off valves on each side of the check valves, connection at water meter and the backflow prevention assembly.

### **5.21 Pressure Vacuum Breaker (PVB)**

In accordance with the California Department of Health Services Public Water Supply Branch policy statement of January 1989, the Department of Health Services finds that a pressure vacuum breaker assembly can provide

adequate user connection cross-connection control for median strip irrigation systems provided the system conforms to the following criteria:

- water is used for irrigation purposes only
- the PVB is installed at least 12 inches above the highest sprinkler head in the system and adequate clearance is provided for testing and servicing the assembly
- the system has no means of inducing a back pressure condition
- the system is supplied from only one service connection
- injection of chemicals into the system is not practiced nor provided for
- the system is only supplied with domestic water

## **5.22 Location of Backflow Prevention Assembly**

The backflow prevention assembly shall be installed at the point of connection on each service line to a customer's water system, or as close as practical, but in all cases before the first branch line leading off the service line. The Water Utility shall have the final authority to determine the location of a backflow assembly.

Point of connection is further defined as follows:

- back of curb for all City streets with planter strips
- back of sidewalk for streets with sidewalk contiguous with curb and gutter
- rights-of-way line on all alleys and unimproved streets

## **5.23 Backflow Prevention Assembly Freeze Protection**

It is the responsibility of the property owner to install freeze protection. If the backflow prevention assembly cannot be inspected due to the presence of freeze protection material, the freeze protection may be removed. The City shall not be responsible for reinstallation of freeze protection.

The relief port at the bottom of the reduced pressure principle backflow assembly must not be covered over by freeze protection. All test ports must be easily accessible along with the serial number and model number.

Freeze protection shall be maintained in a neat, aesthetically pleasing condition. Torn or dislodged freeze protection may be removed by the City.

#### **5.24 Critical Services**

In cases where water service cannot be shut off, even for a few moments, at any time, the City Water utility will recommend that two services be established to the premise. In such case, the same level of backflow protection will be required for each service. In cases where water system configuration facilitates only a single point of connection two backflow prevention assemblies shall be installed in parallel. This shall apply only to the domestic water service and shall not apply to the fire protection system point of connection.

#### **5.25 Water Service Termination**

When the Water Utility Supervisor - Distribution is notified of a water use that represents a clear and immediate hazard to the City water supply that cannot be immediately abated, the Water Utility will institute the procedure for discontinuing water service to the premises.

#### **5.26 Basis for Termination**

Conditions or water uses that create a basis for water termination shall include, but are not limited to, the following items:

- Refusal to install a required backflow prevention assembly.
- Refusal to allow access onto premise for inspection purposes
- Refusal to test a backflow prevention assembly.
- Refusal to repair a faulty backflow prevention assembly.

- Refusal to replace a faulty backflow prevention assembly.
- Removing or bypassing a required backflow preventer.
- Direct or indirect connection between the City water system and sewer line.
- Unprotected direct or indirect connection between the City water system and a system or equipment containing contaminants.
- Unprotected direct or indirect connection between the City water system which presents an immediate health hazard to the City water system.

### **5.27 Water Service Termination and Restoration Procedure**

The City will terminate service to customer's premises after two written notices have been sent specifying the corrective action needed and the time period in which it must be completed.

The first letter is an information letter which outlines the requirements and a specific period of time to respond. If no response is received in that specified time period, a second letter will be sent.

The second letter contains much of the same information as the first letter plus the added statement that the customer's water service will be terminated if no response is received after a specified period of time.

If the customer still has not responded, a door hanger is left at the corresponding service address, giving notice of ten days to comply before the water service is terminated.

Any notices prescribed or allowed by this article shall be deemed to have been given when personally delivered or when placed in the United States mail, postage fully prepaid, addressed to the owner of the premises or, if different, to the water user as shown from the records of the City.

Notwithstanding the above, when conditions create an immediate danger to the City's water supply, water service to the customer's premise(s) may be immediately terminated without notice. However, where practical, the customer or their agent shall be given oral notice of the danger and the water service shut off. The customer shall be entitled to an emergency meeting with the Water Utility Supervisor - Distribution.

Water service shall promptly be restored following an inspection that reveals that compliance with this code has been attained.

### **5.28 Backflow Prevention Assembly Maintenance and Testing**

As provided in the California Code of Regulations Title 17, Section 7583 - 7605 requires backflow prevention devices to be tested at least annually and immediately after installation, relocation, or repair by a person who has demonstrated to the City their competency in such testing. All backflow protection assemblies shall be tested in accordance with the procedures outlined in Section 9 of the University of Southern California Manual of Cross-Connection Control, Ninth Edition. The Cross-Connection Control Program Specialist under supervision of the Water Utility Supervisor - Distribution may require a more frequent schedule if it is determined to be necessary. No assembly shall be placed back in service unless it is functioning as required. A report form supplied by the City Water Utility shall be completed and returned to the City Water Utility each time an assembly is either tested, relocated, or repaired. These assemblies shall be serviced, overhauled, or replaced whenever they are found to be defective.

The City of Redding shall be responsible for administering the testing of backflow prevention devices within the City water distribution system using a person that has demonstrated their competency in the testing of these devices. Competency is demonstrated by the possession of a valid California-Nevada Section AWWA Backflow Prevention Assembly General Tester Certification, the American Backflow Prevention Association (ABPA), or an organization with the equivalent certification requirements.

Each customer with a backflow device(s) on their premises will be notified by

mail when the annual testing of an assembly is scheduled.

### **5.29 Air-gap Separation Inspection Procedure**

The installation of each air-gap separation shall be in accordance with the definition for the air gap in Title 17.

### **5.30 Double-Check Valve Assembly Testing Procedure**

All double-check valve assemblies shall be inspected and tested in accordance with the procedures outlined in Section 9 of the University of Southern California Manual of Cross-Connection Control, Ninth Edition.

### **5.31 Reduced Pressure Principle Assembly Testing Procedure**

All reduced pressure principle assemblies shall be inspected and tested in accordance with the procedures outlined in Section 9 of the University of Southern California Manual of Cross-Connection Control, Ninth Edition.

### **5.32 Pressure Vacuum Breaker Testing Procedure**

All pressure vacuum breakers shall be inspected and tested in accordance with the procedures outlined in Section 9 of the University of Southern California Manual of Cross-Connection Control, Ninth Edition.

### **5.33 Tester Competency Requirements**

Any person interested in testing backflow devices may request the Water Utility Supervisor - Distribution to be added to the list of certified testers. Competency in all phases of backflow prevention device testing and repair must be demonstrated by means of education and/or experience in order to be included on the list. Each tester shall be responsible for the competency and accuracy of all tests and reports.

Minimum Competency Requirements:

- Testers must hold a valid general tester's certification from either the American Water Works Association California-Nevada Section , the American Backflow Association, or an organization with equivalent certification requirements.
- Each tester must use the testing procedures outlined in the Manual of Cross-Connection, 9<sup>th</sup> edition, University of Southern California - Foundation for Cross-Connection Control and Hydraulic Research, Chapter 9
- Each tester shall furnish evidence to show they have available the necessary tools and equipment to properly test backflow devices.
- Each tester must be familiar with the City of Redding Cross Connection Control Program processes and procedures
- Testers must obtain a business license through the City of Redding licensing department prior to conducting any tests.
- Each tester shall have the required State of California Contractor's License (C36)

After notice and a hearing, a tester may be omitted from the annual list for improper testing, repairs and reporting or any action that indicates a lack of knowledge or support of the City's program. Such omissions are at the discretion of the Water Utility Supervisor - Distribution.

### **5.34 Approved Backflow Prevention Assembly Test Gages**

Only the following backflow assembly test gauges shall be used by City approved tester per the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research, Section 9 of the Foundation's Manual of Cross-Connection Control, Ninth Edition.

- Meriam Model 1124

- Midwest Model 830
- Watts Models TKDR, TKDP, TK99D
- Duke Models 75, 75B, 100, 1000, EZ900
- Febco Model TK845-5

### **5.35 Backflow Prevention Assembly Test Gauge Calibration**

Backflow assembly test gauges shall be calibrated at least once every three years. Proof of test gauge calibration shall be provided with an initial request to be placed on the City's Approved Testers List. Existing approved testers shall submit proof of calibration with every three-year Backflow Prevention Tester renewal card.

### **5.36 Groundwater Wells - Domestic Auxiliary Supply**

In order to comply with the Cross Connection Control Program one of the following alternatives for parcels with groundwater wells may be implemented:

- Install as a minimum level of protection a double check valve assembly.
- Pull the pump and weld a watertight cap on top of the well casing.
- Abandon the well per Shasta County Health Department requirements

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