

Volcano Community Services District

Cross-Connection And Backflow Prevention Control Program

June, 2010

I. Purpose

- A. To protect the public potable water supply served by the Volcano Community Services District (VCSD) from the possibility of contamination or pollution by isolating, within its customers internal distribution system, such contaminants or pollutants which could backflow or back-siphon into the public water system.
- B. To promote the elimination or control of existing cross connections, actual or potential between its customers potable water system and non-potable systems.
- C. To provide for the monitoring / record keeping of a continuing program of cross-connection control which will effectively prevent the contamination or pollution of the town of Volcano's potable water system by cross-connection.

II. Authority

- A. The Federal Safe Drinking Water Act of 1974, and the statutes of the State of California Title 17 section 7584 state the water purveyor has the primary responsibility for preventing water from unapproved sources, or any other substances, from entering the public potable water system.
- B. Volcano Community Services District (VCSD), as a water supplier is therefore required under Title 17, section 7584 of the state of California to protect the public water supply from contamination by implementation of a backflow / cross-connection control program. This program has been adopted by the VCSD on _____.

III Responsibility

VCSD shall be responsible for the protection of the public potable water distribution system from contamination or pollution due to the backflow or backsiphonage of contaminants or pollutants through the water service connection. VCSD may designate a Program Administrator (also referred to as "designee" herein) to implement this program.

If, in the judgment of VCSD and/or its designee, an approved backflow device is required at the city's water service connection to any customers premises, VCSD and / or its designee shall give notice in writing to said customer to install an approved backflow prevention device at each service connection to his /her premises. The customer shall, within 90 days install such approved device, or devices, at his/her own expense, and failure or refusal, or inability on the part of the customer to install said device or devices within ninety (90)

days, shall constitute a ground for discontinuing water service to the premises until such device or devices have been properly installed.

IV Definitions

A. Approved

Accepted by VCSD as meeting an applicable specification stated or cited in this regulation, or as suitable for the proposed use.

B. Auxiliary Water Supply

Any water supply, on or available, to the premises other than the purveyor's approved public potable water supply.

C. Cross Connection

An 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. By-pass arrangements, jumper connections, removable sections, swivel or changeover devices, or other devices through which backflow could occur, shall be considered to be cross-connections.

D. Backflow

The flow of water or other liquids, mixtures or substances, under the positive or reduced pressure in the distribution pipes of a potable water supply from any source other than its intended source.

E. Backflow Preventer

A device or means designed to prevent backflow or backsiphonage. Most commonly categorized as air gap, reduced pressure principle device, double check valve assembly, pressure vacuum breaker, atmospheric vacuum breaker, hose bib vacuum breaker, residential dual check, double check with intermediate atmospheric vent, and barometric loop.

E.1. Air Gap

A physical separation sufficient to prevent backflow between the free-flowing discharge end of the potable water system and any other system.

Physically defined as a distance equal to twice the diameter of the supply pipe diameter but never less than one (1) inch.

E.2. Atmospheric Vacuum Breaker

A device that prevents backsiphonage by creating an atmospheric vent when there is either negative pressure or sub atmospheric pressure in a water system.

E.3. Barometric Loop

A fabricated piping arrangement rising at least thirty five (35) feet at its top most point above the highest fixture it supplies. It is utilized in water supply systems to protect against backsiphonage.

E.4. Double Check Valve assembly

An assembly of two (2) independently operating spring loaded check valves with tightly closing shut off valves on each side of the check valves, plus properly located test cocks for the testing of each valve.

E.5. Double Check Valve with Intermediate Atmospheric Vent

A device having two (2) spring loaded check valves separated by an atmospheric vent.

E.6. Hose Bibb Vacuum Breaker

A device that is permanently attached to a hose bib and which acts as an atmospheric vacuum breaker.

E.7. 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 or checks. Device includes tightly closing shut-off valves on each side of the check valves and properly located test cocks for testing of the check valves.

E.8. Reduced Pressure Principal Backflow Preventer

A device consisting of two (2) independently operating approved check valves with an automatically operating differential relief valve located between the two (2) check valves, tightly closing shut-off valves on each side of the check

valves plus properly located test cocks for the testing of the check valves and the relief valve.

E.9. Residential Dual Check

An assembly of two (2) spring loaded, independently operated check valves with tightly closing shut-off valves and test cocks. Generally employed immediately downstream of the water meter to act as a containment device.

F. Backpressure

A condition in which the owners system pressure is greater than the supplier's system pressure.

G. Backsiphonage

The flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply system from any source other than its intended source caused by the sudden reduction of pressure in the potable water supply system.

H. Containment

A method of backflow prevention which requires a backflow prevention device at the water service entrance.

I. Contaminant

A substance that will impair the quality of the water to a degree that it creates a serious health hazard to the public leading to poisoning or the spread of disease.

J. Cross Connection

Any actual or potential connection between the public water supply and a source of contamination or pollution.

K. Water Supplier

Volcano Community Services District (VCSD)

L. Fixture of Isolation

A method of backflow prevention in which a backflow preventer is located to correct a cross connection at an in-plant location rather than at a water service entrance.

M. Owner

Any person who has legal right to, or license to operate or habitat in, a property upon which a cross-connection inspection is to be made or upon which a cross-connection is present.

N. Person

Any individual, partnership, company, public or Private Corporation, political subdivision or the agency or instrumentality of the United States or any other legal entity.

O. Health Agency

Amador County Environmental Health Department (ACEHD).

P. Pollutant

A foreign substance, that if permitted to get into the public water system, will degrade its quality so as to constitute a moderate hazard, or impair the usefulness or quality of the water to a degree which does not create an actual hazard to the public health but which does adversely an unreasonably effect such water for domestic use.

Q. Water Service Entrance

That point in the owners' water system beyond the sanitary control of the district; generally considered to be the outlet end of the water meter and always before any unprotected branch.

V. Administration

A. VCSD or its designated Program Administrator ("designee") appointed by the VCSD will operate a cross-connection control program, to include the keeping of necessary records, which fulfills the requirements of the State of California's (Title 17) cross-connection regulations.

B. The owner shall allow his / her property to be inspected for possible cross-connections and shall follow the provisions of the VCSD's backflow/cross-

connection control program and the states regulations (Title 17) if a cross-connection is permitted.

VI. Degree of Hazard

VCSD and / or its designee shall evaluate the degree of potential health hazard to the public water supply, which may be created as a result of conditions existing on a users premises. VCSD however shall not be responsible for abatement of cross-connections that may exist within a user's premises. As a minimum, the evaluation should consider: the existence of cross-connections, the nature of materials handled on the property, the probability of a backflow occurring, the degree of piping system complexity and the potential for piping system modification. Special consideration shall be given to the following types of users:

- (a) Premises having an auxiliary water supply unless the auxiliary supply accepted as an additional source by the water supplier and is approved by the Amador County Environmental Health Department (ACEHD).
- (b) Premises where substances harmful to health are handled under pressure (Co2 tanks, carbonators).

Type of Protection Required.

The type of protection that shall be provided to prevent backflow into the public water supply shall be commensurate with the degree of hazard that exists on the user's premises. The type of protective device that may be required (listed in an increasing level of protection) includes: Double check valve assembly—(DC), Reduced Pressure Principle Backflow Prevention Device—(RP) and an Air Gap Separation—(AG). The water user may use a higher level of protection than required by the water supplier. The minimum type of backflow protection required to protect the public water supply at the water users service connection are as follows: For premises with an unapproved auxiliary water supply which is interconnected with the public water system an RP or DC may be used in lieu of an AG if approved by both VCSD and ACEHD. Premises where there is an unapproved auxiliary water supply and there are no interconnections with the public water system, a DC may be provided in lieu of an RP if approved by both VCSD and ACEHD.

VII. Requirements

A. VCSD

1. On new installations, VCSD or its designated Program Administrator will provide a Cross-Connection Control Specialist to perform on-site evaluations and / or inspection of plans in order to determine the type of backflow preventer, if any, that will be required. VCSD or its designee will then give the property owner the contact information of a certified

BF / CC inspector who will test the device. Once the device is tested and certified, the device must be tested and maintained annually by a certified BF / CC tester. In any case, a minimum of a dual check valve will be required on any new construction.

2. For premises existing prior to the start of this program, VCSD or its designee will provide a Cross-Connection Control Specialist to perform evaluations and inspections of the premises and inform the owner by letter of any corrective action deemed necessary, the method of achieving the correction, and the time allowed for the correction to be made. Normally ninety (90) days will be allowed, however, this time period may be shortened depending on the degree of hazard involved and the history of the device in question. VCSD or its designee will also put the home / property owner in contact with a certified backflow tester.
3. VCSD will not allow any cross-connection to remain unless it is protected by an approved backflow preventer, which will be annually tested to insure satisfactory operation.
4. VCSD or its designee shall inform the Owner by letter, of any failure to comply, by the time of the first re-inspection. VCSD will allow an additional fifteen (15) days for the correction. In the event the Owner fails to comply with the necessary correction by the time of the second re-inspection, VCSD will inform the owner by letter that the water service to the owner's premises will be terminated within a period not to exceed five (5) days. In the event that the owner informs VCSD of extenuating circumstances as to why the correction has not been made, a time extension may be granted by the VCSD or its designee but in no case will exceed and additional thirty (30) days.
5. If the VCSD determines at any time that a serious threat to the public health exists, the water service will be terminated immediately.
6. The VCSD and its designated Program Administrator shall have on file, a list of Private Contactors who are certified backflow device testers. The owner of the building or property will pay for all charges for these tests.
7. On-site evaluations will be done for all existing properties this summer 2010, upon new construction, upon change in use of the property (e.g. residential to commercial), and/or after a reported / suspected backflow incident. A certified Cross-Connection Control Specialist must perform all on-site evaluations.

B. Owner

1. The Owner shall be responsible for the elimination or protection of all cross-connections on his / her premises.
2. The Owner, after having been informed by a letter from the VCSD, shall at his / her expense, install, maintain, and test, or have tested, any and all backflow preventers on his / her premises.
3. The Owner shall correct any malfunction of the backflow preventer that is revealed by periodic testing.

4. The Owner shall inform VCSD of any proposed or modified cross-connections and also any existing cross-connections of which the owner is aware but has not been found by the VCSD/Program Administrator
5. The Owner shall not install a bypass around any backflow preventer unless there is a backflow preventer of the same type on the bypass. Owners who cannot shut down operation for testing of the device(s) must supply additional devices necessary to allow testing to take place.
6. The Owner shall install backflow preventers in a manner approved by the VCSD and/or its designee.
7. The Owner shall install only backflows approved by VCSD or its designee.
8. Any Owner having a private well or other private water source must have a backflow preventer. The Owner will be required to install a backflow preventer at the service entrance if a private water source is maintained, even if it is not cross connected to the town water system.
9. In the event the Owner installs plumbing to provide potable water for domestic purposes that is on VCSD's side of the backflow preventer, such plumbing must have its own backflow preventer installed.
10. The Owner shall be responsible for the payment of all fees for annual or semi-annual device testing, retesting in the case the device fails to operate correctly, and second re-inspections for non-compliance with VCSD requirements.

Approval of Backflow Preventers

Backflow preventers required shall have passed laboratory and field evaluation tests performed by a recognized testing organization that has demonstrated their competency to perform such tests to the VCSD/Program Administrator.

Construction of backflow preventers

- (a) Air-Gap separation. An air gap separation (AG) shall be at least double the diameter of the supply line, measured vertically from the flood rim of the receiving vessel to the supply pipe; however, in no case shall this separation be less than one inch.
- (b) Double Check valve Assembly. A required double check valve assembly (DC) shall, as a minimum, conform to the AWWA Standard C506-78 (R83) adopted on January 28, 1978 for Double Check Valve Type Backflow Preventive Devices, which is herein incorporated by reference.
- (c) Reduced Pressure Principle Backflow Prevention Device. A required reduced pressure principle backflow prevention device (RP) shall, as a minimum, conform to the AWWA Standard C506-78 (R83) adopted on January 28, 1978 for Reduced Pressure Principle Type Backflow Prevention Devices, which is herein incorporated by reference.

Location of Backflow Preventers

- (a) Air-Gap Separation. An air gap separation shall be located as close as practical to the user's connection and all piping between the user's

connection and the receiving tank shall be entirely visible unless otherwise approved in writing by VCSD and ACEHD.

- (b) Double Check Valve Assembly. A double check valve assembly shall be located as close as practical to the user's service connection and shall be installed above grade, if possible, and in a manner where it is readily accessible for testing and maintenance.
- (c) Reduce Pressure Principle Backflow Prevention Device. A reduce pressure principle backflow prevention device shall be located as close as practical to the user's connection and shall be installed a minimum of twelve inches (12") above grade and not more than thirty-six inches (36") above grade measured from the bottom of the device and with a minimum of twelve inches (12") of side clearance.

VIII. Existing in-use backflow prevention devices.

Any existing preventer shall be allowed by the VCSD to continue in service unless the degree of hazard is such as to supercede the effectiveness of the present backflow preventer, or result in unreasonable risk to the public health. Where the degree of hazard has increased, as in the case of a residential installation converting to a business establishment, any existing backflow preventer must be upgraded to a reduced pressure principle device, or a reduced pressure principle device must be installed in the event that no backflow device was present.

IX. Periodic Testing

- A. All approved backflow devices shall be tested and inspected upon installation and annually thereafter. VCSD or its Program Administrator will send out reminder notices when annual testing is coming due.
- B. Backflow device testing shall be performed by a certified tester. This testing will be done at the owner's expense.
- C. The testing shall be done on any day of the week during daylight hours. Exception to this may, be made by the owner and an effort will be made to accommodate the request.
- D. Any backflow preventer that fails during a periodic test will be repaired or replaced. When repairs are necessary, upon completion of the repair the device will be re-tested at the owners expense to insure correct operation. High-hazard situations will not be allowed to continue unprotected if the backflow preventer fails the test and cannot be repaired immediately. In other situations, a compliance date of no more than thirty (30) days after the test date will be established. The owner is responsible for spare parts, repair tools, or a replacement device. Parallel installation of two (2) devices is an effective means of owner insuring that uninterrupted water service during testing or repair of devices and is strongly recommended when the owner desires such continuity.

- E. Backflow prevention devices will be tested more frequently than specified in A. above, in cases where there is a history of test failures and VCSD feels that due to the degree of hazard involved, additional testing is warranted. Cost of the additional tests will be born by the owner.

X. Records and Reports

A. Records

The VCSD will initiate and maintain the following:

1. Master files on customer cross-connection tests and/or inspections.
2. Copies of lists and summaries supplied to ACEHD

B. Reports

The VCSD will submit the following to ACEHD

1. Initial listing of low hazard cross-connections to the state.
2. Initial listing of high hazard cross connections to the state.
3. Annual update lists of items 1 and 2 above.
4. Annual summary of cross-connection inspections to the state.

All lists, assessments and/or records will be made available to ACEHD

upon request

XI. Fees and Charges

VCSD or its designee will make available a list of fees charged by certified backflow testers for the following, upon request:

1. Testing fees
2. Re-testing fees
3. Fee for re-inspection

Notice:

VCSD may modify this policy at any time in response to changes in California regulations or as required by ACEHD.