

CROSS-CONNECTION CONTROL POLICY

Section 1 INTENT

Under Public Law 93-523, the Safe Drinking Water Act of 1974, and the regulations of Chapter 445A of the Nevada Administrative Code, the water purveyor has the primary responsibility for preventing water from unapproved sources or any other substances from entering the public potable water system. In compliance with NAC 455A, it is the intent of this policy to adopt cross-connection control standards which establish the requirements for design, construction, installation, and maintenance of backflow prevention assemblies.

It is the purpose of this policy to protect the potable water supply of the Virgin Valley Water District (District) from the possibility of contaminants, pollutants, or water from an unapproved source from entering the District's water system. More specifically, this policy is intended to prevent delivered water that has passed beyond the District's water system and into the customer water system from re-entering the District's system.

The intent of the policy is to protect the District's water system and its customer from backflow, and back siphonage and/or cross-connections caused by customers whose water use may harm the quality and safety of the District's potable water supply.

Section 2 DEFINITIONS

The following words and terms used in this policy will be interpreted as indicated below unless the context clearly indicates otherwise and regardless of whether the word is capitalized in its use:

“Air Gap Separation”, which may also be referred to herein as **“AG”**, will mean a physical separation between the free-flowing discharge end of a potable water supply pipeline and the overflow rim of an open or non-pressurized receiving vessel. An “approved air gap separation” shall be at least double the inside diameter of the supply pipe measured vertically above the top rim of the receiving vessel, or if the pipe is affected by side walls at least three times the effective diameter of the pipe, but in no case shall it be less than 1 inch.

“ABPA” will mean the American Backflow Prevention Association.

“Approved Backflow Prevention Assembly” will mean those backflow prevention assemblies tested and approved by the Foundation for the Cross-Connection Control and Hydraulic Research of the University of Southern California or other person or entity approved by the General Manager of the District pursuant to NAC 445A.65555.

“Approved Water Supply” will mean the source, well or plant whose potability is regulated and monitored by a State or local health agency. This supply includes all sources, wells, pump

tanks, equipment and appurtenances used to produce, treat or store water for public consumption or use.

“Auxiliary Water Supply” will mean any water supply on or available to the premises other than the Virgin Valley Water District water system. These auxiliary waters may include water from another purveyor’s potable water system or any natural source such as a well, spring, river, stream, ponds, etc., or “used water” or “industrial fluids.” (NAC 445A.65585).

“AWWA” will mean American Water Works Association.

“Backflow” means a hydraulic condition in which a relative difference in pressures causes a nonpotable liquid, gas or other substance to flow into a potable water system. (NAC 445A.65605)

“Backflow Prevention Assembly” will mean an assembly used to prevent backflow into a potable water system.

“Back Siphonage” will mean a form of backflow due to a reduction in system pressure which causes a negative or sub-atmospheric pressure to exist at a site in the water system.

“Certified Backflow Prevention Assembly Tester” will mean a person who is approved by the District and certified to test assemblies for the prevention of backflow by the California / Nevada section of the American Water Works Association, the American Backflow Prevention Association or an equivalent organization approved by the Division (NAC 445A.6569). District approval shall be based on competency in testing, repair, and making test reports on approved backflow prevention assemblies to the reasonable satisfaction of the District.

“Contamination” means an impairment of water quality by chemical substances or biological organisms which the Division or the appropriate district board of health determines to be sufficient to create a risk or threat to the public health. (NAC 445A.65795)

“Cross-Connection” will mean any unprotected actual or potential connection or structural arrangement between the District’s or a customer’s potable water system and any other source or system through which it is possible to introduce into any part of the potable system any used water, industrial fluid, gas or substance other than the intended potable water with which the system is supplied. Bypass arrangements, jumper connections, removable sections, swivel or change over devices and other temporary or permanent devices through which or because of which “backflow” can or may occur are considered to be cross-connections.

“Cross-Connection Control Specialist” (“CCCS”) or “Cross Connection Control Program Specialist” (“CCCPS”) as defined and certified by the California/Nevada Section of AWWA and who meets all other requirements set forth in NAC 445A. The employee will administer certain areas of this policy as directed by the General Manager of the District.

“Customer or User” will mean the owner or operator of a private water system served from the District’s water system.

“Customer’s Potable Water System” will mean that portion of the privately owned potable water system lying between the point of service and point of use. This system will include all pipes, conduits, tanks, receptacles, fixtures, equipment and appurtenances used to produce, convey, store or use potable water.

“Customer’s Water System” will include any water system located on the customer’s premises, whether supplied by the District water system or an auxiliary water supply. The system or systems may be either a potable water system or an industrial piping system.

“Customer Service Office” will mean the District office located at 500 Riverside Road, Mesquite, Nevada.

“Degree of Hazard” will be derived from the evaluation of conditions within a system which can be classified as either a pollution (non-health) or a contamination (health) hazard.

“Designee” shall mean a District employee in possession of a current certificate in cross-connection control and who meets all other requirements set forth in NAC 445A. The employee shall administer the District’s policy as directed by the Board of Directors and General Manager of the District.

“District” shall mean the Virgin Valley Water District.

“District Engineer” shall mean an engineer employed by, or contracted to, the District. (NAC 445A.6589)

“Division” shall mean the Division of Environmental Protection of the State Department of Conservation and Natural Resources.

“Double Check Detector Check”, which may also be referred to herein as “DCDA” will mean an assembly composed of an approved double check valve assembly with a bypass water meter and a meter-sized approved double check valve device. The meter shall register accurately for very low flow rates and shall register at all flow rates. (NAC 445A.65855)

“Double Check Valve Assembly”, which may also be referred to herein as **“DC”**, will mean an assembly composed of two independently acting approved check valves, including tightly closing shutoff valves attached on each end of the assembly and fitted with properly located test cocks available for testing the water tightness of each check valve.

“Fire Sprinkler System” will mean a system of piping which is connected to a public water system and has sprinklers that automatically discharge water over the area of a fire. (NAC 445A.65945)

“General Manager” will mean the General Manager of the District. He is responsible for the administration, production, maintenance and distribution functions of the water system of the District.

“Health Agency” will mean either, the State of Nevada, Division of Health, Bureau of Health Protection Services or the County of Clark’s Department of Environmental Management.

“Health Hazard” will mean an actual or potential threat of contamination of a physical or toxic nature to the District’s water system or the customer’s potable water system that would be a danger to health.

“Health Officer” will mean the Health Officer for the County of Clark and/or the State of Nevada or a designated representative of the Health Officer. (See also NAC 445A.66055)

“Hearing Officer” will mean the Health Officer for the County of Clark and/or the State of Nevada or a designated representative of the Health Officer.

“Hospital” will mean any institution, place, building or agency which maintains and operates facilities for one or more persons for the diagnosis, care and treatment of human illness, including convalescence and care during and after pregnancy or which maintains and operates organized facilities for any such purposes, and to which persons may be admitted for an overnight stay or longer.

“Industrial Fluids” will mean any fluid or solution which may be chemically, biologically or otherwise contaminated or polluted in a form or concentration that would constitute a health hazard if introduced into a potable water supply.

“Laboratory-Approved Testing” will mean the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California or another laboratory having the equivalent facilities for both the laboratory and field evaluation of backflow prevention assemblies and approved in accordance with NAC 445A.65555.

“NAC 445A” will mean Chapter 445A of the State of Nevada Administrative Code.

“Point of Service” will mean the point of water delivery to the customer which shall be at the customer’s property line unless special written approval is provided by the District through an Approved Point of Service Location form signed by the District’s General Manager. The District loses jurisdiction and sanitary control at the Point of Service. This definition shall apply to this Cross-Connection Control Policy.

“Plumbing Official” will mean the individual, department, board or agency established and authorized by state, county, city or other political subdivision created by law to administer and enforce the provisions of applicable state laws and regulations.

“Plumbing Hazards” will mean an internal or plumbing type cross-connection in a customer’s potable water system that may be either a pollution or a contamination type hazard. This includes but is not limited to cross-connection to toilets, sinks, lavatories, wash trays, domestic washing machines and lawn sprinkling systems. Plumbing type cross-connections may be located in many types of structures including homes, apartment houses, hotel and commercial or

industrial establishments. Such a connection, if permitted to exist, must be properly protected by an appropriate type of cross-connection control assembly.

“Pollution Hazard” will mean an alteration of the chemical, physical, biological or radiological integrity of water that impairs the quality of the water to such an extent that the impairment adversely and unreasonably affects those aesthetic qualities which would have made the water desirable for domestic use; and does not impair the quality of the water to such an extent that it creates a risk or threat to the public health. (NAC 445A.6623)

“Potable Water” will mean water from any source which has been investigated by the Health Agencies and which has been approved for human consumption.

“Reduced Pressure Principle Backflow Prevention Assembly”, which may also be referred to herein as **“RP”**, will mean an assembly that (1) contains two independently acting approved check valves and a hydraulically operating, mechanically independent pressure relief valve located between the approved check valves and below the upstream check valve; (2) has properly located, resilient, seated test cocks and tightly closing, resilient, seated shutoff valves at each end of the assembly; (3) is designed to protect against a Pollution Hazard and Contamination under conditions of Back Siphonage or backpressure; and (4) has been tested and approved by a Laboratory. (NAC 445A.66315)

“Reduced Pressure Detector Assembly, which may also be referred to herein as “RPDA” means an assembly composed of an approved reduced pressure principle backflow prevention assembly with a bypass water meter and meter-sized approved reduced pressure principle devices. The meter shall register accurately for very low flow rates and shall register at all flow rates.

“System Hazard” will mean an actual or potential threat of danger to the physical properties of the District’s water system or the customer’s potable water system or of a pollution or contamination which would have an effect on the quality of the potable water in the system.

“Unapproved Water Supply” will mean a water supply which has not been approved for human consumption by the Nevada Division of Health, Bureau of Health Protection Services or the Clark County Health Officer.

“USC Foundation” will mean the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.

“VVWD” or the “District” shall mean the Virgin Valley Water District.

“Water Purveyor” will mean the Virgin Valley Water District.

“Water Service Connection” will mean the District’s water pipe and appurtenances from the District’s water main to the point of service.

“Water service lateral” or “lateral” means a pipe that conveys water from a water main to the point of use of the water. (NAC 445A.6659)

“Water System” will mean the District owned water mains operated as a public utility, under a current health permit, to furnish water for domestic purposes. This system will include all facilities and appurtenances between the approved water supply and the point of service such as valves, pumps, pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances used to convey water for public consumption use.

Section 3 RESPONSIBILITY

Pursuant to NAC 445A.67185, the District is responsible to ensure that there are no unprotected connections between the Water System and any source of a Pollution Hazard or Contamination pursuant to which any unsafe water or other degrading material can be discharged or drawn into the Water System as a result of Back Siphonage or Backflow. (NAC 445A.67185)

The District is primarily responsible for the prevention of contamination and pollution of the water system. Such responsibility begins at the point of origin of the District’s water supply and includes adequate treatment facilities and water mains, and ends at the point of service of the customer’s water system. The District will insure that adequate backflow and back-siphonage protection is maintained on consumable water systems directly connected to the District’s system.

The General Manager may delegate responsibility to the Cross-Connection Control Specialist for determining the cross-connection control standards as outlined in this policy and applicable for the protection of the District water system as a result of new installations, and alterations or repairs of existing customer water systems.

The customer will have the prime responsibility for preventing contaminants and pollutants from their water system from entering the District’s water system as required by this policy and the Health Agency.

No person shall advertise by local means, sell, or offer for sale any water-treating chemical or substance, water-using or water-operated equipment, mechanism or contrivance which may cause contamination or pollution of the domestic water supply if not equipped with an approved backflow prevention assembly, unless such person states in such advertisement or at the time of sale or offer that state law and this policy may require such backflow prevention assembly in connection with the use of such chemical, substance, equipment, mechanism, or contrivance.

The District shall not be responsible for any loss or damage to any customer, any person or property directly or indirectly resulting from or caused by any improper or negligent installation, operation, use, repair, maintenance, or interfering with, any approved backflow prevention assembly, required by this policy.

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.

In accordance with NAC 445A.67185(d), except as otherwise provided in NAC 445A.67185 to 445A.67255 inclusive, the provisions and recommendations of the following publications are hereby adopted by reference:

- The “Uniform Plumbing Code,” as adopted by reference in NAC 445A.6663;
- “Recommended Practice for Backflow Prevention and Cross-Connection Control,” as adopted by reference in NAC 445A.6663; and
- The “Manual of Cross-Connection Control,” as adopted by reference in NAC 445A.6663.]

Commitment to Cross-Connection and Backflow Prevention Control

The District is committed to the implementation of this Cross-Connection Control Policy. The District will comply with applicable law related to techniques and equipment proven to be effective in backflow prevention.

The District is a member of the American Water Works Association and the Nevada Rural Water Association; both advocates of cross-connection and backflow prevention control.

The District subscribes to the policies, standards and codes of the:

- “Uniform Plumbing Code”, 1994 edition, as adopted by the International Association of Plumbing and Mechanical Officials.
- University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USCFCCCHR) Manual of Cross-Connection and Control
- American Water Works Association (AWWA) Standards and Manuals

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

Section 4 OPERATIONAL CRITERIA

It is the responsibility of the District as water purveyor, or the Health Officer to evaluate the hazards beyond the service connection in a customer’s water system to determine whether solid, liquid or gaseous pollutants or contaminants are, or may be, handled on the customer’s premises in such a manner as to possibly permit contamination of the public water system. When a hazard or potential hazard to the public water system is found or suspected, the customer will be required to install an approved backflow prevention assembly or an approved air gap separation as indicated in the District’s Design Standards and Specifications and in accordance with the provisions of this policy.

Section 5 LEVEL OF PROTECTION

The type of protection that will be provided to prevent backflow into the District's water system shall be commensurate with the degree of hazard that exists on the customer's premises. The type of approved backflow prevention assemblies that may be required (listed in an increasing level of protection) includes: Approved Double Check Valve Assembly - DC, a Reduced Pressure Principle Assembly - RP or an Air Gap Separation - AG. (See NAC 445A.6719(1)(a)-(c)). The customer may choose a higher level of protection than required by this policy. The minimum types of protection from cross-connection required for particular service connections approved assemblies are listed in Section 12 of this policy. Situations, which are not covered in this policy, shall be evaluated on a case-by-case basis and appropriate cross-connection and backflow protection shall be determined by the General Manager, Cross-Connection Control Program Specialist, or the Health Officer or the appropriate board of health. If there is any conflict between any of the provisions of this policy, regarding the type of protection from Cross-Connection required for a particular type of service connection, the most stringent of those provisions prevails. The Division or the appropriate district board of health or the District may impose requirements regarding the installation and use of Backflow Prevention Assemblies that are more stringent than the provisions of this policy. (NAC 445A.6721)

Section 6 CUSTOMER RESPONSIBILITIES

The customer shall furnish and install all approved air gap separation or approved backflow prevention assemblies in accordance with this policy and as directed by the General Manager, the Cross-Connection Control Specialist, the Plumbing Official or the Health Officer. All air gap separation and approved backflow prevention assemblies shall be kept in good working order and in safe condition.

Upon notification by the General Manager, the Cross-Connection Control Program Specialist or the Health Officer, the customer shall test, repair or replace existing air gap separation and backflow prevention assemblies determined to be unapproved, defective or not providing the level of protection specified in this policy. The length of time allotted for the correction of the deficiency shall be determined by the General Manager, the Cross-Connection Control Program Specialist or the Health Officer. All work shall be arranged by the owner through private contract. In the event water service is to be maintained during the repair or removal of an existing backflow prevention assembly, the customer shall provide for an approved backflow prevention assembly to be temporarily installed. The temporary approved backflow prevention assembly shall be tested at the time of its installation.

The customer shall bear all costs of testing and inspections provided by the certified backflow prevention assembly tester. The customer shall bear all costs for the installation of approved air gap separation and approved backflow prevention assemblies. In addition, the customer shall bear all costs for the maintenance, repairs and replacement of existing air gap separation and backflow prevention assemblies.

The customer shall be responsible for obtaining all necessary plumbing permits for new water system installations by the customer and for alterations or repairs to the customer's existing system.

The customer's premises shall be available for inspection at all reasonable times to the General Manager, the Cross-Connection Control Program Specialist or the Health Officer to determine if protection of the District's water system is required.

Section 7 APPROVAL OF BACKFLOW PREVENTION ASSEMBLIES

All backflow prevention assemblies whether installed by the Virgin Valley Water District or the customer shall be a type approved by the USC Foundation. Backflow preventers required by this policy shall have passed laboratory and field evaluation tests performed by a recognized testing organization which has demonstrated their competency to perform such tests to the General Manager.

A current list of approved backflow prevention assemblies shall be kept on file in the office of the Virgin Valley Water District.

Section 8 CERTIFICATION OF BACKFLOW PREVENTION ASSEMBLY TESTERS

Backflow prevention assembly testers are limited to those individuals with a current certificate of competence from the AWWA or the ABPA. In addition, to be approved, the tester's name must appear on the District's list of approved testers. A current list of certified backflow prevention assembly testers shall be kept on file in the office of the District and will be made available upon request. Should a question arise about the competency of any individual tester, the final determination of a proposed tester's eligibility rests with the General Manager or the General Manager's designee.

Section 9 TESTING

Testing of backflow prevention assemblies shall be performed by certified backflow prevention assembly testers. Approved backflow prevention assemblies shall be tested immediately after they are installed, relocated or repaired and shall not be placed into service unless they are functioning as required. At a minimum, each approved backflow prevention assembly is tested at the time of installation and annually thereafter to ensure proper operation. Notices of annual inspections shall be sent to customers by the District at least 30 days before the inspection date. In instances where a hazard is deemed great enough, testing may be required at more frequent intervals. Test procedures shall be those recommended by the USC Foundation, ABPA or the AWWA. (NAC 445A.67245)

The General Manager, the Cross-Connection Control Program Specialist or Health Officer shall notify the customer when tests are required. Necessary test forms shall be provided and completed by the certified backflow prevention assembly tester and returned to the District.

Records of inspections, testing or repairs shall be kept by the District for a period of three years from the date of such inspection, test, or repair.

Section 10 IMPLEMENTATION

1. New Construction

All new cross-connection and backflow prevention control assemblies shall be designed by a professional engineer licensed in the State of Nevada within an appropriate discipline. (See NAC 445A.6589). Final construction plans shall be submitted to the District Engineer for review and approval prior to construction. Each submittal shall be accompanied by a written report on the degree of hazard to be expected for the customer's site and the rationalization for the equipment recommended for the size of the assembly and the proposed design. The District shall make a site survey to insure that the proposed backflow assembly meets the requirements of Section 7 of this policy, the recommendations of the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USCFCCCHR) Manual of Cross-Connection Control and the American Water Works Association (AWWA) Standards for the degree of hazard(s) and the type of protection required.

The District will not approve the development's water system improvements until the conditions of the site survey, referred to above, have been met.

2. Existing Backflow Assemblies

Existing cross-control and backflow prevention assemblies that may pose a Pollution Hazard as determined by the District and not previously the subject of a hazard site survey, shall be inspected for compliance with Section 7 of this policy, the recommendations of the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USCFCCCHR) Manual of Cross-Connection Control and the American Water Works Association (AWWA) Standards. Any deficiencies or failures to comply found or which come to the knowledge of the District will be reported to the owner of the assembly and a written order for correction, repair and/or retrofit shall be issued. The written order shall provide for a 45-day period for compliance unless the degree of hazard posed by such non-compliance calls for a shorter time period as deemed necessary by CCCPS. The proposed corrections, repairs and/or retrofit shall be subject to the approval of the District's General Manager or the District Engineer. An inspection of the completed repair shall be made by the District's Cross-Connection Control Specialist upon completion of the work. Non-compliance with the written order shall be grounds for termination of water service.

Section 11 CONSTRUCTION WATER USE

The approved methods for providing construction water service are from temporary underground service connections or by a fire hydrant.

A. Temporary Underground Water Service Connection

A temporary underground water service connection may be one (1) inch to four (4) inches in diameter depending upon the capacity limits of the existing distribution system.

1. The fee for temporary meter water services shall be based on the District Monthly Water Rates and Charges.
2. A reduced pressure backflow prevention assembly shall be furnished and installed by the owner/contractor.
3. The temporary backflow assemblies shall be tested by a certified backflow assembly tester before placing it into service.
4. A list of certified backflow assembly testers is available at the Virgin Valley Water District customer service counter.

B. Water Use from Fire Hydrants

A fire hydrant use application (see section VI-8) is required for all water use from fire hydrants.

1. Fire hydrant use permit applications are available at the Virgin Valley Water District customer service counter.
2. Temporary water use from fire hydrants requires the installation of a reduced pressure backflow assembly.
3. Customer shall furnish, install, and test all backflow assemblies for temporary water use.
4. The contractor/customer shall be responsible for the security and condition of the backflow assembly for the duration of the hydrant use application.

C. Fire hydrants used to fill water tank trucks, portable spray and cleaning equipment shall require a “Hydrant Application”.

1. All equipment must have an “approved air gap separation” shall be at least twice the diameter of the supply pipe measured vertically above the overflow rim of the receiving tank. In no case shall the air gap be less than one inch.

Section 12 PENALTIES FOR NON-COMPLIANCE

If the District finds that a customer or other person has violated or is in violation of this policy or any other provisions of applicable law, appropriate administrative and/or legal remedies may be taken. Such customers or persons may be subject to fees and/or disconnection of service. Unless circumstances warrant the District taking action sooner (e.g., immediate threat or hazard to the public water system), after 45 days of non-compliance, the District reserves the right, but shall not have the obligation, to take appropriate steps to bring the property into compliance with this policy and applicable law. The customer shall pay or reimburse the District for all costs, labor,

materials, and other expenses associated therewith. The customer shall also pay all applicable District fees. To the extent allowed by law, all costs, labor, materials, expenses, and fees shall be added to the property owner's account and the District shall have a lien on the owner's property to secure payment to the District.

Where hazards to the public water system exist and except in cases of emergency or similar circumstances, the District will provide a notice of intent to terminate water service to the tenant, owner or both.

If a defect or deficiency in a cross-connection and backflow assembly, including any failure to provide cross-connection and backflow assemblies required by this policy and/or NAC 445A, is observed or detected by the District, or otherwise comes to the District's attention, the District will send, by mail, facsimile or email, a notice of needed repairs to the customer of the applicable service connection and the owner of the applicable cross-connection and backflow prevention assembly, if different from the customer. If the defect or deficiency in the cross-connection and backflow assembly is not remedied within 10 days after the date the District sends notice of needed repairs, the District will send, by mail, facsimile or email, a notice of non-compliance to the customer of the applicable service connection and the owner of the applicable cross-connection and backflow prevention assembly, if different from the customer. Such notice of non-compliance will include information notifying the customer and/or owner that: (a) the District may, in its discretion but at the customer and/or owner's cost and expense, repair or remedy the defect or deficiency in the cross-connection and backflow assembly if the customer and/or owner does not repair or remedy said defect or deficiency within 45 days from the date the original notice of needed repairs was sent to the customer and/or owner; and (b) the customer and/or owner's water service is subject to disconnection and termination for failure to comply with the requirements of this policy or NAC 445A, including immediate termination (without notice) if the District determines that the defect or deficiency in the cross-connection and backflow assembly poses a threat or hazard to the public water system.

Section 13 FEES

The fees for inspection and testing of cross-connection and backflow assemblies and installation or repair of cross-connection and backflow assemblies by the District or by a contractor hired by the District are set forth in the following table:

BACKFLOW FEE SCHEDULE

Backflow size	Device Testing	Parts & Repair	Backflow Installation, Installed by private contractor
3/4"-3"	\$225.00	Parts & Labor at \$150/Hour, one hour minimum	Contractor's bill plus 50%
4" up	\$350.00	Parts & Labor at \$150/Hour per worker, one hour minimum	Contractor's bill plus 50%

Approved along with the Rules, Regulations and Rates October 20, 2015.

Ayes: Nephi Julien, Barbara Ellestad, Richard Bowler, Robert "Bubba" Smith and Sandra Ramaker

Nays: None

Abstentions: None

Absent: None