COMMUNITY WATERWORKS
MODEL PROGRAM
CROSS CONNECTION CONTROL

1. By Ordinance No. _____ Adopted _____

Title of Ordinance _____

2. Administration

The **Cross Connection Control Program Administrator** (hereafter referred to as the "Program Administrator") shall administer and enforce this program under the supervision of the **(Town Manager, County Administrator, Mayor, or other chief administrative officer).**

3. Purpose

A. Preventing intrusion of contamination into the distribution from premise plumbing from cross-connections and backflow by installing an appropriate backflow prevention device or by backflow prevention by separation at the service connection. Containment has the highest priority.

B. Preventing backflow of pollution or contamination into the premise plumbing by informing the consumer of the shared responsibility for water quality and providing assistance where requested in determining the degree of hazard. Informing owners of the need for isolation beyond the service connection will be a continuing effort.

C. Preventing backflow of pollution or contamination into the waterworks and into the premise plumbing, where it is not intricate or complex, by application of point-of-use isolation in lieu of containment. The alternative of isolation in lieu of containment will be evaluated at each premises where containment is required.

4. Procedures

A. General

1. Each premise plumbing system will be assessed on a regular basis for cross connection hazards. Assessment may be performed by inspections, interviews or questionnaires. Interviews may be conducted on site or by phone.
2. The **Program Administrator** will arrange to have trained personnel conduct an onsite interview annually with the owner or owner's representative of each premise plumbing system identified in the following situations:
    a. A substance is handled in such a manner as to create an actual or potential hazard to a waterworks (this shall include premises having sources or systems containing process fluids or waters originating from a waterworks which are no longer under the control of the owner);

b. There exists internal cross-connections that, in the judgment of the owner or the department, may not be easily correctable or have intricate or complex plumbing arrangements that make it impracticable to determine whether or not cross-connections exist;
c. There are security requirements or other prohibitions or restrictions that prevent the assessment of all potential cross-connections that may impair the quality of the water delivered;
d. There is a repeated history of cross-connections being established or reestablished;
e. There are fire protection systems, lawn sprinkler systems, or irrigation systems;
f. The owner or department can show that a potential cross-connection hazard exists.
g. Booster pumps or fire pumps connected to the waterworks.
h. Hospitals, mortuaries, clinics, veterinary establishments, nursing homes, and medical buildings;
i. Laboratories;
j. Piers, docks, and waterfront facilities;
k. Sewage treatment plants, sewage pumping stations, or storm water pumping stations;
l. Food and beverage processing plants;
m. Chemical plants, dyeing plants, and pharmaceutical plants;
n. Metal plating industries;
o. Petroleum or natural-gas processing or storage plants;
p. Radioactive materials processing plants or nuclear reactors;
q. Car washes and laundries;
r. Buildings with commercial, industrial, or institutional occupants served through a master meter;
s. Water loading facilities;
t. Slaughter houses and poultry processing plants;
u. Farms where the water is used for other than household purposes;
v. Commercial greenhouses and nurseries;
w. Health clubs with swimming pools, therapeutic baths, hot tubs, or saunas;
x. Paper and paper-product plants and printing plants;
y. Pesticide or exterminating companies and their vehicles with storage or mixing tanks;
z. Facilities that blend, store, package, transport, or treat chemicals, and their related vehicles;
aa. Schools or colleges with laboratory facilities;
bb. Highrise buildings (four or more stories);
cc. Multiuse commercial, office or warehouse facilities; and
dd. Others specified by the owner or the department when reasonable cause can be shown for a potential backflow or cross-connection hazard.

3. The **Program Administrator** will arrange to have a questionnaire sent to each remaining premise plumbing system owner or have the questionnaire completed by phone interview, including residential, at least every five (5) years. A change in the account holder shall trigger completion of a new questionnaire.

4. The **Program Administrator** will route all new plans for service connections to serve fire service connections and lawn sprinkler or irrigation systems and will route backflow prevention recommendations beyond the service connection through the Local Building Official.
5. The Local Building Official will coordinate cross connection control requirements at new premises, premises where usage has changed, premises where booster or fire pumps are used, and all others where plumbing modifications occur, with the **Program Administrator.**
6. The **Program Administrator** will review and track the cross connection control operational verification reports and notify the premise plumbing system owner in writing as to any testing, inspecting, and overhauling requirements 60 days prior to their annual due date.
7. Enforcement action recommendations will be submitted by the **Program Administrator** to the **(Town Manager, County Administrator, Mayor, or other chief administrative officer)** for approval.

B. Assessment by Interviews

1. Interviews will follow a prepared questionnaire used to assess the need for cross connection control by containment.
2. **A trained program representative** will conduct a cross connection control and backflow prevention onsite interview with each premise plumbing system owner or representative identified in Section 5 A 2. During these interviews, each installed device or separation will be inspected for appropriateness, proper installation and general appearance. Point-of-use isolation protection will be discussed with the owner. A report will be filed with the **Program Administrator** with violations noted and/or recommendations for repair, replacement of existing devices or separations and/or installation of additional devices.
3. Available information about the premises to be surveyed will be gathered prior to the interview.
4. The reasons for cross connection control and backflow prevention will be explained to the premise plumbing system owner or representative.
5. Water uses after it enters the premises will be investigated.
6. Plans for future expansion and possible additional protection requirements will be discussed.
7. An inspection of the premises will be requested to determine if point-of-use isolation should be installed for the protection of the premise plumbing system users or considered for substitution for containment.
8. All information will be recorded on the prepared questionnaire. This will include water uses, assessment of degrees of hazard and diagrams.
9. The results of the interview with recommendations for containment devices, separations and point-of-use isolation will be submitted to the **Program Administrator** for approval. Recommendations for isolation devices or separation in lieu of containment will also be submitted to the Local Building Official through the **Program Administrator** for approval.

10. For those facilities where phone interviews will be conducted by the **trained program representative,** they will be conducted at least annually. A cross connection control questionnaire will be completed to reaffirm the degree of hazard and to assess the facility for new hazards. During these interviews, each installed device or separation will be evaluated for appropriateness, proper installation and general appearance. Point-of-use isolation protection will be discussed with the owner. A report will be filed with the **Program Administrator** with violations noted and/or recommendations for repair, replacement of existing devices or separations and/or installation of additional devices.

C. Assessment by Questionnaires

1. Annual questionnaires will be sent to each premise plumbing system owner except those premises where on site or phone interviews are being conducted.
2. The results of the annual questionnaires will be reviewed by the **Program Administrator**. Based on the response to the questionnaires, cross connection control interviews will be scheduled and appropriate devices or separations required to provide containment and/or point-of-use isolation where appropriate. No response to the questionnaire will prompt an onsite interview. Refusal of access for inspection or provision of pertinent information shall prompt the requirement to install a high hazard containment device.
3. Questionnaires can be repeated annually at the discretion of the **Program Administrator** after an initial onsite interview, including those identified in Section 5 A 2, where devices or separations are installed and the results of the initial interview are not expected to change. These premises would be where the plumbing is not intricate or complex and not expected to be modified and no unexpected change in use of the premises would occur without the **Program Administrator** being notified.

D. Consumer Notification

1. The **Program Administrator** will notify the premise plumbing system owner in writing of the required location of any device or separation; type of device or separation, and the deadline for completing the installation - usually 15 days.
2. If the premise plumbing system owner fails to install any required device or separation within the deadline or fails to complete testing, inspecting or overhauling as required, the **Program Administrator** shall send a Notice of Violation, including a notification of termination of water service unless compliance is obtained within 30 days.

E. New Premises

1. All building permit applications shall be reviewed and approved by the **Local Building Official** for cross connection control requirements prior to issuance of a building permit.
2. Required devices or separations shall be operational prior to issuance of a certificate to occupy. The facility owner is responsible for completing the initial testing of devices and verification of separations and submitting the test reports to the **Program Administrator**.

3. A follow up inspection of all premises except residential will be performed by the **trained program representative** within 30 days of occupancy.

F. Existing Premises

1. All owners or representatives of existing premises identified in Section 5 A 2 will be interviewed and owners notified in writing of any backflow prevention requirements.
2. All remaining owners will initially be interviewed or mailed questionnaires.

G. Premises with Residential Containment Devices – Owned by Waterworks

1. Residential containment devices, such as those devices consisting of dual, independent check valves (ASSE # 1024), (shall be tested every _____ years) and shall be (overhauled) (replaced) (every _____ years) (on a schedule with the meter replacement program). Testing, if appropriate, overhauling or replacing these devices should be as recommended by the manufacturer.
2. Assessment by questionnaires shall be conducted on a regular basis (every ___ years) and results reviewed as noted above.

H. Premises with Auxiliary Water Systems

1. Premises with an auxiliary water system requesting a new service connection or reconnection to the waterworks must be assessed by onsite inspection for cross connection hazards and the appropriate separation installed, inspected, and operational prior to making the service connection.
2. Premises with an auxiliary water system, may, upon approval of the **Program Administrator**, maintain the auxiliary water system on the premises if a separation from the consumer's premise plumbing is provided and maintained and access is granted for inspections. A written request must be made and the Local Building Official concurs.
3. Annual assessments will be made to verify the maintenance of the separation. If an interview is denied, then the customer will be notified in accordance with Section IV D of the Program.

I. Premises with Booster or Fire Pumps

1. Premises having booster pumps or fire pumps connected to the waterworks shall have the pumps equipped with a pressure sensing device to shut off or regulate the flow to prevent a reduction of pump suction line pressure to less than 20 psi gauge.
2. Annual assessments of premises with booster or fire pumps to prevent a reduction of pump suction line pressure to less than 20 psi gauge will be made to verify the maintenance of the pressure sensing device. If an interview is denied, then the customer will be notified in accordance with Section IV D of the Program.
3. Waterworks shall track the inventory and annual assessments for single-family residences with booster or fire pumps.

J. Backflow Prevention Device Worker

1. The Backflow Prevention Device Worker (BPD Worker) is responsible for making competent inspections and for repairing or overhauling backflow prevention devices and making reports of such repair to the premise plumbing system owner on forms approved by the **Program Administrator.**
2. The BPD Worker shall include the list of materials or replacement parts used and insure that parts used in the repair of the backflow prevention device meet the manufacturer's recommendations.
3. The BPD Worker shall not change the design or operational characteristics of a device during repair or maintenance without prior written approval of the consumer's premise plumbing system owner and the **Program Administrator.**
4. The BPD Worker shall be equipped with and be competent in the use of all the necessary tools, gauges, manometers and other equipment necessary to properly test, repair and maintain backflow prevention devices.
5. Starting January 1, 2023, persons testing and repairing backflow prevention assemblies and backflow prevention devices shall be certified by a Commonwealth of Virginia tradesman certification program (identified by DPOR as backflow prevention device workers).

K. Point-of-use Isolation Protection

1. Any premises, residential, commercial, or industrial, where all actual or potential cross connections can be easily correctable at each point-of-use and where the premise plumbing system is not intricate or complex, point-of-use isolation protection by application of appropriate backflow prevention devices or separations may be used in lieu of installing a containment device at the service connection if the following conditions are met:
   a. The method of protection provided shall be, in the judgment of the **Program Administrator**, the method which best provides protection; and
   b. The premise plumbing system owner grants access for inspections; and makes a request in writing for point-of-use isolation protection; and
   c. The Local Building Official concurs.
2. All backflow prevention assemblies or backflow elimination methods or backflow prevention devices installed under this section shall be of the approved type and shall comply with the requirements of the USBC.

L. Containment Policy and Service Line Protection

Per 12VAC5-590-610, the waterworks requires containment consisting of a backflow prevention assembly installed at:

- The service connection for all commercial and non-residential service connections, as well as all connections served by a master meter. This includes, but is not limited to, facilities listed in 5 A 2. Customers wishing to install their backflow prevention assembly (BPA) at a location other than the service

connection is subject to the approval of the **Program Administrator** and the Building Official. If approval to install the BPA at a location downstream of the service connection is granted, the BPA shall be installed prior to any unprotected takeoffs.

- Residential irrigation system BPAs may be located at the point of connection between the premise plumbing and the irrigation system, but before any irrigation system outlets, controls, or openings. This isolation in lieu of containment method of protection is permitted so that the customer can be protected from potential contamination by their own irrigation system. Under this scenario, the irrigation BPA serves as the required containment BPA, and is therefore subject to all regulatory guidance directed by this program.

[optional] All residential meters installed or replaced after [date] will contain dual check valves (ASSE #1024).

The **Program Administrator** or the Building Official may require additional backflow prevention assemblies or devices to provide isolation protection for spaces inside of multi-use properties to ensure a potential hazard to the potable water system is not spread to the water system utilized by other occupants of the building. These include facilities identified by the VDH regulations as requiring a backflow prevention assembly at the service connection, but have been located within a multi-use building. Additional examples would also include but not limited to restaurants, medical facilities, veterinarian facilities, nail or hair salons, dry cleaners and commercial laundry equipment, reclaimed or recycled water, solar hot water systems, grocery stores, breweries or beverage processing plants, film laboratories, etc.

The USBC and the manufacturer's specifications shall be used to determine the appropriateness of the backflow prevention assembly or backflow prevention device application and shall depend on the degree of hazard that exists or may exist.

M. The owner shall maintain acceptable working pressures in the distribution system to reduce the potential for backflow to occur. All waterworks shall provide a minimum working pressure of 20 psi gauge (psig) at all service connections [12VAC5-590-510 C].

N. The **Program Administrator** shall review the cross-connection program and written cross-connection control plan not less than every five years and update it as necessary to satisfy the requirements of 12VAC5-590-580 C, et seq. The **Program Administrator** shall submit updates to the Office of Drinking Water to obtain approval.

O. Temporary or emergency service connections shall be protected with a backflow prevention assembly or backflow prevention method. This include all connections made to fire hydrants for purposes such as filling tank trucks, construction activities, and landscaping.

[Option 1] Refer to the waterworks hydrant meter program detailing how the owner issues hydrant meters and backflow prevention assemblies to customers for more details. As part of this program, the owner will issue all waterworks hydrant meters with backflow prevention assemblies. The owner will ensure all meter program backflow prevention assemblies are inspected and tested annually.

[Option 2] The waterworks has not implemented a hydrant meter program and limits use of fire hydrants to the fire department for firefighting and waterworks personnel for flushing.

P. The **Program Administrator** shall notify the customer of the intent to discontinue water service unless the following are corrected:
   1. The consumer does not install, test and maintain a required backflow prevention assembly or backflow elimination method in accordance with the applicable sections of this chapter;
   2. The consumer allows a required backflow prevention assembly or backflow elimination method to become inoperable or the consumer removes or bypasses it; or
   3. The owner knows an unprotected or inadequately protected cross-connection exists on the premises and determines that there is inadequate backflow prevention at the service connection.

   In the event the situation is not corrected within the required timeframe, the owner shall discontinue service.

5. Records

A. An up-to-date listing of all customers shall be maintained by the program. The list will contain.

- owner of premises
- tenant
- name of premises
- service address
- phone number
- contact person
- number of service connections
- size of service connection
- annual assessment by: (Interview) (mailed questionnaire)

B. An up-to-date listing of premise plumbing system owners who have backflow prevention assemblies, backflow elimination methods, and backflow prevention devices, (including pressure sensing devices and separations from auxiliary water systems and air gaps) installed shall be maintained by the program. The list will contain:

- owner of premises
- tenant
- name of premises

- service address
- phone number
- contact person
- location of assembly, method, device or separation
- device manufacturer
- device model number
- device serial number
- device size
- device ASSE number
- cross connection or pressure sensing device tested (annually) (semiannually) (quarterly)
- pressure sensing device manufacturer
- pressure sensing device model number
- pressure sensing device serial number
- pressure sensing device pressure set point
- type of separation
  - air gap
  - physical disconnection
- separation verified (annually) (semiannually) (quarterly)
- type of protection
  - containment
  - containment and isolation
  - isolation in lieu of containment
- access (granted) (denied) (not necessary)

C. Cross connection control survey reports shall be maintained by the program for 10 years. The report will contain:

- inventory information as noted in section 5 A and B, above
- an assessment of:
  - degree of hazard
  - appropriateness of device or separation
  - installation acceptable
  - general condition of device or separation
  - repair/replacement recommendations
  - new/additional device or separation recommendations
  - any indication of thermal expansion problems

See Appendices B and C for the Survey Report forms

D. Records of testing, repairs, and maintenance of all backflow prevention assemblies, backflow elimination methods, and backflow prevention devices shall be maintained by the **Program Administrator** for 10 years. In the case of single-family residences with fire protection

systems, lawn sprinkler systems, or irrigation systems, the waterworks owner has determined the waterworks [will] [will not] maintain an inventory and records.

The test report will contain:

- inventory information as noted in section 5 A and B, above
- line pressure
- results of testing
- test method used
- date and signature of device tester

If repairs were made, the test report will contain:

- which parts replaced
- replacement parts used
- probable cause of test failure
- preventative measures taken

See Appendix A for the Testing Report form

E. Questionnaires shall be maintained by the **Program Administrator** for 10 years. The questionnaire will contain:

- owner and service address
- occupant if different from owner
- phone number
- brief explanation of the program
- brief explanation of causes of backflow and control measures
- some likely cross connections:
  - a garden hose with its outlet submerged
  - kitchen sink spray hose with its spray head submerged
  - hand-held shower massager with its head submerged
  - garden hose used as an aspirator to spray soap or garden chemicals
  - spring, hot-tub, cistern, or swimming pool connected to the house plumbing system
  - water softeners improperly connected
- specific questions which will include but not be limited to:
  - individual wells, springs or cisterns on the property
  - pressure booster pumps
  - water storage tanks
  - water treatment systems
  - outside hose bibs used in conjunction with:
    - chemical sprayers
    - jet spray washers
    - swimming pools, hot tubs, saunas, etc.
    - lawn sprinkler or irrigation systems

        - photographic developing
        - utility sinks with hoses extending below sink rim
        - animal watering troughs
    - existing cross connection control devices:
        - working properly
        - leaking, noisy
        - any modifications or repairs made
        - date of last test
        - any problems with hot water tank relief valve or faucet washers not lasting very long
    - also included with the questionnaire should be:
        - educational material
        - who to contact for further information
        - who to contact if contamination is ever suspected
        - a deadline to respond to the questionnaire

See Appendices B and C for the Questionnaire forms (residential & commercial)

F. Residential containment device (ASSE #1024) overhaul or replacement reports shall be maintained by the program for 10 years

The report will contain:

- inventory information as noted in section 5A, above
- overhaul/replacement action
- date of action

G. Written CCCP plan documents, including documentation of period plan reviews and document revision and approval letters shall be maintained by the program for until superseded and at least 10 years.

6. Notification Letters

- New Annual First Test - Appendix D
- Non Compliance Letter - Appendix E
- Failure Letter First Notice - Appendix F
- Failure Letter Second Notice - Appendix G
- Need Backflow Device Notice - Appendix H

7. Addressing Backflow of Contaminants or Suspected Backflow.

The premise plumbing system owner, Local Building Official, backflow device worker or any other person should report backflow of contamination or the suspicion of backflow to any one or all of the following persons:

- Program Administrator
- Local Building Official

- Waterworks Operator
- Virginia Department of Health, Office of Water Programs Field Office
- Local Health Department, Environmental Health Specialist

The **trained program representative** will be responsible for investigating reports of contamination or suspected contamination and will be responsible for notifying the appropriate Virginia Department of Health, Office of Drinking Water Field Office within one business day in the most expeditious manner (telephone and confirmed by email). A written report will be submitted by the 10th day of the month following the month during which backflow occurred addressing the incident, its causes and effects, and safeguards required or other action taken.

In the event of backflow of contaminants into the waterworks, the **Program Administrator** shall promptly take or cause corrective action to confine and eliminate the contamination. Actions may include:

1. Temporarily discontinue service to the facility in question until the cause is corrected.
2. Remove the service meter and flush the contamination from the service line to prevent further migration into the distribution system.
3. Flushing the distribution system.
4. Sampling to confirm satisfactory water quality.
5. Install, as appropriate, containment protection.

8. Device Selection Guidelines

A. Any backflow prevention assembly or backflow elimination method or backflow prevention device shall be of the approved type and shall comply with the USBC.

B. General safeguards
   1. The backflow prevention assembly or backflow elimination method or backflow elimination device used shall depend on the degree of hazard that exists or may exist. The safeguard shall ensure maintenance of the distribution system water quality and its usefulness.
   2. The degree of hazard, either high or low, is based on (i) the nature of the contaminant; (ii) the potential of the health hazard; (iii) the potential method of backflow (either by backpressure or by backsiphonage); and (iv) the potential effect on waterworks structures, equipment, and appurtenances used in the storage, collection, purification, treatment, and distribution of potable water. The USBC shall be used as a guide to determine the degree of hazard for any situation.
   3. The USBC and the manufacturer's specifications shall be used to determine the appropriateness of the backflow prevention assembly or backflow prevention device application for containment.

C. Device Selection - shall depend on the degree of hazard which exists or may exist. Backflow prevention by separation gives the highest degree of protection and shall be used whenever practical to do so in high hazard situations subject to backpressure.

9. Device Installation

Any backflow prevention assembly or backflow prevention device shall be installed in accordance with the USBC and the manufacturer's instructions. Owners shall not allow the installation of backflow prevention devices or backflow prevention assemblies with openings, outlets, or vents that are designed to operate or open during backflow prevention:

1. In areas subject to flooding or in pits;
2. In areas with atmospheric conditions that represent a contamination threat to the potable water supply; and
3. In such a manner as to be able to be bypassed.

10. Device Testability/Serviceability

1. Containment or isolation devices used within the premise plumbing system that are capable of being tested and repaired in-line include the Reduced Pressure Principle Device (RPZ), Double Gate—Double Check Valve Assembly (DG—DC) & Pressure Vacuum Breaker (PVB).
2. Residential Dual Checks without an intermediate atmospheric vent and Boiler Dual Checks with an intermediate atmospheric vent are testable but most of these ASSE approved devices must be removed for testing. Some can be overhauled in-line.
3. Generally, a visual inspection is the only means to inspect most Hose Bibb Vacuum Breakers (HBVBs) since they cannot be removed if installed in accordance with the manufacturer's instructions. Some manufacturers do provide wall hydrant type HBVB with removable vacuum breakers which can be easily removed for inspection and replacement.
4. Pipe connected Atmospheric Vacuum Breakers (AVBs) can be inspected by removing the top cover.
5. Air gaps and physical disconnection require only a visual inspection.

11. Thermal Expansion

Normally, as water is heated and expands it would back up in the service line into the main if no usage was occurring. Installation of backflow prevention devices or certain plumbing appurtenances (pressure reducing valves) at the service connection or within the consumer's premise plumbing prevent thermally expanded water from flowing from the premises into the distribution system. When the water heater is operating, water is expanding and pressure is increasing, thermal expansion in a closed plumbing system under no flow conditions may cause the emergency temperature and pressure relief valve to open and close frequently and may reduce the life of plumbing fixtures and piping.

The temperature and pressure (T & P) relief valve is an emergency relief valve, not an operating control valve. If the T & P relief valve is used frequently, its useful life will be shortened and it could cease to function.

Thermal expansion can cause damaging stress and strain to water heaters, solenoid valves, O-rings, float valves, pump seals, and plumbing fixtures or fittings.

Generally, 80 psi for a short period of time is the maximum pressure under no flow conditions most fixtures, appliances or appurtenances should be subjected to.

Where thermal expansion is a problem the following devices could be installed:

1. A bladder or diaphragm type expansion tank;
2. An auxiliary pressure relief valve;
3. An anti-siphon ball cock with auxiliary relief valve into the toilet tank set at no more than 80 psi.

Installation should be in accordance with the manufacturer's instructions, the Uniform Statewide Building Code and the National Sanitation Foundation.

The **Program Administrator** will advise Customers of the potential for thermal expansion prior to or during installation of a backflow prevention device. Solutions to thermal expansion will be at the discretion of the facility owner and at the expense of the facility owner.

12. Appendices

The appendices to this document are:

Appendix A - Backflow Prevention Device Testing, Maintenance & Inspection Report
Appendix B - Cross Connection Survey, Residential Water Customer
Appendix C - Cross Connection Control Survey, Commercial, Institutional, Multi-Family and Industrial Facilities
Appendix D - New Annual First Test
Appendix E - Non Compliance Letter
Appendix F - Failure Letter First Notice
Appendix G - Failure Letter Second Notice
Appendix H - Need backflow device notice

Appendix A
Backflow Prevention Device Testing, Maintenance & Inspection Report

Cross Connection Control Certificate

To be completed by a Certified Backflow Prevention Worker

Address of Device:	
Owner / Manager:	
Telephone:	
Mailing Address:	
Contact Person:	

Make & Model #:	
Size:	
Type of Device: (Circle or Check One) →	☐RP ☐DC ☐DGDC
Serial #:	
Location of Device:	
Device connected to: (Circle or Check one)	☐Irrigation ☐Fire System ☐Main Service ☐Other (please list): _____

OPERATIONAL TEST

CHECK VALVE 1.		CHECK VALVE 2.		GATE VALVE 3.	
LEAKED		LEAKED		LEAKED	
CLOSED TIGHT		CLOSED TIGHT		CLOSED TIGHT	

*************PSI READINGS REQUIRED ************

RECORD DIFF PSI	RECORD DIFF PSI	RECORD DIFF PSI RELIEF VALVE OPEN AT:

OPERATIONAL TEST AFTER REPAIR

CHECK VALVE 1.		CHECK VALVE 2.		GATE VALVE 3.	
LEAKED		LEAKED		LEAKED	
CLOSED TIGHT		CLOSED TIGHT		CLOSED TIGHT	
RECORD DIFF PSI		RECORD DIFF PSI		RECORD DIFF PSI RELIEF VALVE OPEN AT:	

Repair Date: _____	**Repair Remarks:**

Tested By: (please print) _____	**BF Certificate #:** _____
Company: _____	**Business Tel #:** _____
Signature:	**Date:**

Appendix B

CROSS CONNECTION SURVEY

RESIDENTIAL WATER Customer

Date: _____

Customer Name: _____

Address: _____

Please indicate if your Residence has any of the following *(Check All that Apply)*:

☐ Landscape Irrigation System / In-ground Sprinkler System
☐ Can you add chemicals to the system? ☐Yes ☐ No

☐ Fire Sprinkler System
☐ Can you add chemicals to the system? ☐Yes ☐ No

☐ Home Dialysis Machine and/or radiant floor heating system connected to water supply

☐ Solar System *(Check All that Apply)*
☐ Heat Exchangers ☐ Panels ☐ Boilers

☐ Livestock Watering
☐ Hose Filled ☐ Automated

☐ Water Treatment Equipment (i.e. Water Softener)
☐ Is Backwash / Cleaning Cycle Air Gapped? ☐ Yes ☐ No

☐ Auxiliary source of supply facilities (*Check all that apply)*
☐ Well or Surface Water ☐ Storage Tank ☐ Reclaimed Water ☐ Other: _____

☐ Swimming Pool / Hot Tub / Decorative Pond - Filled with a hose? ☐ Yes ☐ No

☐ Rain Catchment System connection to water supply

☐ Dock or Piers with potable water supply

☐ On-site Sewage (Septic) Pump Station *(This is pumping equipment that pumps raw sewage to a municipal sewer or pumps effluent from a septic tank to a drain field)*

☐ Home Based Business – Type of Business: _____

☐ Do you currently have air vacuum breakers or check valves on your outside faucets? ☐ Yes ☐ No

☐ Do you currently have a back flow prevention device installed? ☐ Yes ☐ No If yes, please provide the following:
Make: _____ Model: _____ Serial #: _____ Size: _____ inch
Location of Assembly: _____ **Date of Last Test:** _____ please attach a copy of the test form and return with this survey.

☐ NONE OF THE ABOVE

Signature of Person Completing This Survey: _____

Appendix C
CROSS CONNECTION CONTROL SURVEY
Commercial, Institutional, Multi-Family and Industrial Facilities

Customer Name: _____

Date: Water Service Account Number:
Service Address:
Business Name:
Water Service Type: **(Circle ONE)** Apartment Complex or Duplex **(Total # of Units)**_____
Mobile Home park (Total # of Trailers) Commercial Industrial Govt. or School
Temporary Bldg./Construction Multi-Story Bldg. (# of Stories)

YARD IRRIGATION / SPRINKLER SERVICES

In-Ground Irrigation System: Spigot/Faucet & Garden Hose Use Only: PLEASE CHECK ONE
Type of Heads: Pop-Up Shrub Soaker Other Will your irrigation system be designed to add fertilizer, weed control, or other additives by using pressure, injection or aspiration methods either manually or automatically? Yes No Will you irrigation system need or use a booster pump? Yes No Will this water meter used to fill a Swimming Pool, Hot Tub or Spa? Yes No

COMMERCIAL OR INDUSTRIAL SERVICES

Type of business: medical, restaurant, catering, video rental/sales, auto-detail shop, clothing, office, commercial, industrial, gas station, Laundromat, grocery/deli, dry cleaners, sweet shop, other: (Describe)

_____

_____

Water will be used for: cooking/drinking boilers chillers cooling tower equipment
What Type? Please Define:
Are cooling inhibitors, chemical treatments or other additives used in processing; boilers; chillers; or cooling towers? Yes No Does your water service use pressure water? Yes No

FIRE SPRINKLER SERVICES
PLEASE ANSWER "YES" OR "NO" TO ALL BLANKS (as appropriate)

Is your proposed fire sprinkler system a wet system or a dry system? Is it used to supply private fire hydrants or a wall-mounted fire hose cabinet only? Will your fire sprinkler system contain/use anti-freeze or foaming agents? Will your fire sprinkler system use a booster or jockey pump? If there is any other type of fire sprinkler system that is not listed above, please describe:

_____
_____
_____
_____

APPENDIX D
NEW ANNUAL FIRST TEST

[DATE]

[CUSTOMER NAME]
[LOCATION ADDRESS 1]
[LOCATION ADDRESS 2]
[LOCATION ADDRESS 3]

Account #:
Serial #:
Meter #:
Device:
Test Due:
Reference:

[SERVICE LOCATION STREET ADDRESS]
[CUSTOMER NAME]

Dear Customer:

The [waterworks name] is writing to remind you that the backflow prevention device(s) installed on your water service(s) as indicated above must be tested within one year of installation and then on an annual basis. According to our records, it is time for the annual testing of the device(s) at the above referenced service address. The annual test is required by both the [waterworks name] and the Virginia Department of Health, and is the responsibility of the owner or occupant. [12 VAC 5-590-600]

A successful test of the device(s) must be completed by a Virginia State Certified Backflow Prevention Device Tester possessing a valid certification. You can find Certified Testers in the Yellow Pages or online under "Plumbing Contractors" or "Backflow Testers." Please have your Certified Tester complete the enclosed backflow assembly test report and mail or fax the completed form to the return address shown on the form within thirty (30) calendar days of the noted "Test Due" date shown on this letter.

If your records indicate that the referenced device has recently been successfully tested and you believe that testing at this time is not warranted, please submit a copy of the most current backflow assembly test report.

If you have any questions or concerns, please contact us at [phone number], between 8:00 a.m. and 5:00 p.m., Monday through Friday.

Sincerely,

Cross Connection Specialist

APPENDIX E
NON COMPLIANCE LETTER

[DATE]

[CUSTOMER NAME]
[LOCATION ADDRESS 1]
[LOCATION ADDRESS 2]
[LOCATION ADDRESS 3]

Account #:
Serial #:
Meter #:
Device:
Test Due:
Reference:

[SERVICE LOCATION STREET ADDRESS]
[CUSTOMER NAME]

Dear Customer:

To date, the [waterworks name] has not received a copy of your annual test report showing the proper functioning of the backflow device(s) located on your water service(s) at the above referenced address. This annual inspection is required by both the [waterworks name] and the Virginia Department of Health, and is the responsibility of the owner or occupant. [12 VAC 5-590-600]

In order to avoid possible disconnection of water service to your property, or other corrective measures, please mail or fax a copy of your annual test report to the following address within fifteen (15) business days of the date of this letter.

[mailing address]
Fax: [fax number]
ATTN: Cross Control Specialist

If you have any questions or concerns, please contact us at [phone number], between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday.

Sincerely,

Cross Connection Specialist

APPENDIX F
FAILURE LETTER FIRST NOTICE

[DATE]

[CUSTOMER NAME]
[LOCATION ADDRESS 1]
[LOCATION ADDRESS 2]
[LOCATION ADDRESS 3]

Account #:
Serial #:
Meter #:
Device:
Test Due:
Reference:

[SERVICE LOCATION STREET ADDRESS]
[CUSTOMER NAME]

Dear Customer:

The [waterworks name] is sending you this notice to inform you that, per information furnished to our office, your Backflow Prevention Device at the above address has failed the testing specifications required by the [waterworks name] Cross Connection Control Program and Virginia Department of Health regulations. [12 VAC 5-590-600]

In order to avoid possible disconnection of water service to your property, or other corrective measures, please mail or fax a copy of a test report prepared by a Certified Tester, and showing compliance with the testing specifications, to the following address within thirty (30) calendar days of the date of this letter:

[address]
Fax: [fax number]
ATTN: Cross Control Specialist

If your records indicate that the referenced device has recently been successfully tested and you believe that testing at this time is not warranted, please submit a copy of the most current backflow assembly test report.

If you have any questions or concerns, please contact us at [phone number], between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday.

Sincerely,

Cross Connection Specialist

APPENDIX G
FAILURE LETTER SECOND NOTICE
[DATE]

[CUSTOMER NAME]
[LOCATION ADDRESS 1]
[LOCATION ADDRESS 2]
[LOCATION ADDRESS 3]

Account #:
Serial #:
Meter #:
Device:
Test Due:
Reference:

Dear Customer:

The [waterworks name] is sending you this SECOND NOTICE to inform you that, per our records, your Backflow Prevention Device at the above address has failed the testing specifications required by the [waterworks name] Cross Connection Control Program and Virginia Department of Health regulations. [12 VAC 5-590-600]

In order to avoid possible disconnection of water service to your property, or other corrective measures, please mail or fax a copy of a test report prepared by a Certified Tester, and showing compliance with the testing specifications, to the following address within fifteen (15) business days of the date of this letter:

[address]
Fax: [fax number]
ATTN: Cross Control Specialist

If your records indicate that the referenced device has recently been successfully tested and you believe that testing at this time is not warranted, please submit a copy of the most current backflow assembly test report.

If you have any questions or concerns, please contact us at [phone number], between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday.

Sincerely,

Cross Connection Control Coordinator

APPENDIX H
NEED BACKFLOW DEVICE NOTICE
[DATE]

[CUSTOMER NAME]
[LOCATION ADDRESS 1]
[LOCATION ADDRESS 2]
[LOCATION ADDRESS 3]

Account #:
Serial #:
Meter #:
Device:
Test Due:
Reference:

[SERVICE LOCATION STREET ADDRESS]
[CUSTOMER NAME]

Dear Customer:

The [waterworks name] has identified the need for installation of a Backflow Prevention Device on the water service at your property listed above, pursuant to the [waterworks name] Cross Connection Control Program and Virginia Department of Health regulations [12 VAC 5-590-600]. In order to avoid possible disconnection of water service to your property, or other corrective measures, please arrange to have a Backflow Prevention Device properly installed on the water service at your property as soon as possible.

A successful test of the device(s) must be completed by a Virginia State Certified Backflow Prevention Device Tester possessing a valid certification. You can find Certified Testers in the Yellow Pages or online under "Plumbing Contractors" or "Backflow Testers."

Please have the required device installed and have your Certified Tester complete the enclosed backflow assembly test report and mail or fax the completed form to the return address shown on the enclosed form by no later than thirty [30] calendar days from the date of this letter.

If a device has been installed and successfully tested, please submit a copy of the most current backflow assembly test report.

If you have any questions or concerns, please contact us at [phone number] between 8:00 a.m. and 5:00 p.m., Monday through Friday.

Sincerely,

Cross Connection Specialist