

THE CONSOLIDATED MUTUAL WATER COMPANY BACKFLOW PREVENTION POLICY

GENERAL

1.0 Legislative Intent.

It is the intent of **THE CONSOLIDATED MUTUAL WATER COMPANY** to protect the COMPANY potable water system from contamination or pollution by backflow from a Stockholder's private plumbing system or auxiliary water source, and to provide for the maintenance of a continuing program of backflow prevention, which will systematically prevent the contamination or pollution of the COMPANY potable water system.

1.1 Responsibility.

In compliance with Colorado Revised Statutes 25-1-114(1)(h) and section 39 of the Colorado Primary Drinking Water Regulations, 5 CCR 1002, the COMPANY has the responsibility to implement a backflow prevention program and for enforcement thereof. If a backflow preventer is required at the COMPANY water service connection or any specific hazard on the property, for the protection of the COMPANY potable water system, the Meter Department shall give notice in writing to the Stockholder or designee to install an approved backflow preventer at each service connection to the premises or each individual hazard. The Stockholder shall install an approved backflow preventer at the Stockholder's sole expense. Backflow preventers must be installed by a licensed plumber and in accordance with the manufacturer's specifications. Adequate drainage is required to prevent potential damage caused by water discharge from a backflow preventer. Backflow preventers must be tested by an ASSE or ABPA certified backflow prevention assembly tester upon installation, repair, maintenance, and at least once per year. New or replacement containment and containment-by-isolation backflow preventers must be tested with an authorized COMPANY representative present to witness the initial backflow test. The Consolidated Mutual Water Company is in no way liable for any damages resulting from the installation, testing, repair, malfunction, or correction of a backflow preventer or cross connection.

1.2 Definitions.

When not otherwise clearly indicated by the context, the following words and phrases have the meanings described below:

Air Gap – the unobstructed vertical distance through the free atmosphere between the lowest opening from any supplying pipe, faucet, tank, plumbing fixture, or other device and the flood level rim of the receiving vessel. An approved air gap will be at least double the diameter of the supply pipe, measured vertically, above the top rim of the vessel; and, in no case less than one inch. When an air gap is used at the service connection to prevent the contamination or pollution of the potable water system, an emergency bypass shall be installed around the air gap system and an approved reduced pressure principle assembly will be installed in the bypass system.

Approved – accepted by the COMPANY as adequate backflow protection. All backflow preventers must be lead-free and meet the laboratory & field performance specifications of ASSE or the Foundation for Cross-Connection Control and Hydraulic Research (FCCHR) of the University of Southern California.

Auxiliary Water Source – any water source on or available to the premises other than the COMPANY potable water supply. These auxiliary waters may include water from another purveyor's potable water supply, natural sources (i.e., a well, spring, river, stream, pond, lake, etc.), "used waters", or industrial fluids. These waters may be polluted, contaminated, or may be objectionable and constitute an unacceptable water source over which the COMPANY does not have sanitary control.

Backflow – the undesirable reversal of flow of water, liquids, mixtures, gases, or other substances into the distributing pipes of the COMPANY potable water system from any source by backpressure or backsiphonage.

Backpressure – a form of backflow from pressure within a private plumbing system that exceeds the COMPANY supply pressure and allows for the reversal of the normal direction of flow. Some causes of backpressure include pumps, elevated piping, thermal expansion, etc.

Backflow Preventer – any device, method, assembly, or type of plumbing configuration designed to prevent backflow.

Backsiphonage – a form of backflow caused by a negative atmospheric pressure. This can occur in a potable distribution system when experiencing heavy consumption demands (i.e., firefighting, main breaks, main flushing, etc.).

Certified Backflow Tester – any person who has passed an ASSE (American Society of Sanitary Engineering) or ABPA (American Backflow Prevention Association) backflow prevention assembly tester exam, and who is listed by ASSE or ABPA as a certified tester. The certified backflow tester must abide by all CMWC policies. The certified backflow tester must submit a copy of their certification and test gauge calibration before testing any backflow preventer within the CMWC service area and after each re-certification to the Meter Department to maintain an active status. CMWC reserves the right to perform random testing on any assemblies and to refuse tests from any certified backflow tester who has not displayed honest and appropriate testing or reporting.

Check Valve – a self-closing device which is designed to permit the flow of fluids in one direction and to close if there is a reversal of flow. Check valves are not considered backflow preventers.

COMPANY and CMWC – The Consolidated Mutual Water Company.

Compliance Period – the allowable time between a failed survey and the installation, testing, correction, or repair of a backflow preventer or cross connection that must be completed or ready for inspection by an authorized CMWC representative. Compliance Period may also refer to scheduling an inspection or survey.

Containment – the type or method of backflow protection that is appropriate for the degree of hazard installed at the water service connection to the Stockholder's private plumbing system. No branches, tees, or threaded connections are permitted upstream of the service connection backflow protection.

Contaminant – any substance that could impair the quality of water to a degree which would create a hazard to public health.

Critical Level – the C-L or C/L marking on a backflow preventer that determines the minimum elevation above the flood level rim of the fixture or downstream uses at which the backflow preventer may be installed. When a backflow preventer does not bear a critical level marking, the bottom of the backflow preventer shall constitute the critical level.

Critical Service – a domestic water service connection that requires a continuous supply of potable water in order to maintain public health or safety, demands a large volume of water to sustain economic resiliency, or services a susceptible population (i.e. hospitals, first responders, nursing homes, assisted living, schools, etc.).

Cross Connection – any physical arrangement whereby the COMPANY water supply is or could become contaminated or polluted through backflow. Bypass arrangements, jumper connections, removable sections, swivel or changeover devices, and other temporary or permanent devices through which, or because of which, backflow could occur are considered to be cross connections.

Cross Connections, controlled – any cross connection between a potable water system and a nonpotable or potentially nonpotable supply that poses a contaminant or pollution hazard, which is adequately protected by a properly installed and approved backflow preventer that will continuously protect the COMPANY potable water system for the degree of hazard.

DOMESTIC Backflow Preventer – a lead-free Reduced Pressure Principle Assembly (RP) that conforms to ASSE standard 1013 unless a variance has been granted by the Meter Department in writing.

Double Check Valve Assembly (DC) – a testable assembly that conforms to ASSE standard 1015 consisting of (2) independently operating check valves. A variance must be granted by the Meter Department in writing before a DC can be accepted as adequate backflow protection. DC assemblies must be readily accessible for testing and maintenance.

Double Check Detector Assembly (DCDA) – a specially designed assembly that conforms to ASSE standard 1048 consisting of a line-size DC with a protected bypass containing a specific water meter. The meter shall register accurately for rates of flow up to 2gpm and shall show a registration for all rates of flow. A variance must be granted by the Meter Department in writing before a DCDA can be accepted as adequate backflow protection. DCDA assemblies must be readily accessible for testing and maintenance.

Dual Check Valve with Intermediate Atmospheric Vent – a non-testable device that conforms to ASSE standard 1012 consisting of (2) independently acting check valves with an intermediate relief valve. This type of device is utilized for backsiphonage and low backpressure protection but can only be installed for pollution hazards. A variance must be granted by the Meter Department in writing before a dual check valve with intermediate atmospheric vent can be accepted as adequate backflow protection.

FIRE LINE Backflow Preventer – a lead-free Reduced Pressure Detector Assembly (RPDA) that conforms to ASSE standard 1047 unless a variance has been granted by the Meter Department in writing.

Flood Level Rim – the top edge of a receiving vessel from which water can overflow.

Gauge Calibration – any gauge used to test backflow preventers in the CMWC service area which is required to be calibrated annually. A copy of the calibration must be submitted via email to the Meter Department after each calibration to maintain an active status within the CMWC service area.

Hazard, degree of – evaluation of risks to public health from materials which could come in contact with the COMPANY potable water system through a cross connection.

Hazard, health – an actual or potential threat of impairment to the quality of water within a potable water system to a degree that could create or, in the judgment of the Meter Department, may create a hazard to public health and wellbeing.

Hazard, pollution – an actual or potential threat of impairment to the quality of water within a potable water system to a degree which does not create a hazard to public health but would affect the aesthetic qualities for domestic use.

Hose Connection Backflow Preventer – a testable device that conforms to ASSE standard 1052 consisting of (2) independently acting check valves with an intermediate atmospheric vent. This type of device is utilized for backsiphonage and low backpressure protection but cannot be subjected to more than twelve (12) hours of continuous pressure. A variance must be granted by the Meter Department in writing before a hose connection backflow preventer can be accepted as adequate backflow protection.

Industrial Fluids System – any fluid or solution which may be chemically, biologically, or otherwise contaminated or polluted in any form or concentration which would constitute a hazard if introduced into the COMPANY potable water system.

Meter Department – the person(s) appointed by the President of the COMPANY to enforce and supervise the compliancy of the applicable COMPANY water service accounts to the regulations set forth by the Colorado Department of Public Health and Environment (CDPHE).

Multipurpose Piping Sprinkler System – a piping system intended to serve both domestic needs in excess of a single fixture and fire protection needs from one common piping system throughout the dwelling unit(s). Design verification is required from the authority having jurisdiction for this type of system to satisfy backflow prevention requirements.

Nonpotable Water – water that is not safe for human consumption or is of questionable potability.

Parallel Protection – two or more approved backflow preventers of the same type installed for containment protection in parallel to provide uninterrupted water service to the private plumbing system. Several hydraulic conditions should be considered when installing backflow preventers in parallel. CMWC requires parallel protection for all critical services and may require parallel protection for other situations that are deemed critical.

Passive Purge Sprinkler System – a type of sprinkler system that serves a single toilet in addition to the fire sprinklers. Design verification is required from the authority having jurisdiction for this type of system to satisfy backflow prevention requirements.

Pollution – any substance that could impair the quality of water to a degree which would affect the aesthetic water qualities (i.e., taste, odor, color) but would not constitute a hazard to public health.

Potable Water – water sources that have been investigated by the Colorado Department of Health & Environment (CDPHE) and have been approved for human consumption.

Pressure Vacuum Breaker (PVB) – a testable assembly that conforms to ASSE standard 1020 consisting of (1) independently operating check valve and an independently operating air-inlet valve located on the discharge side of the check valve. Temporary variances may be granted by the Meter Department for existing PVB's that are properly installed, however, a lead-free Reduced Pressure Principle Assembly would be required in the event that the existing PVB needed extensive repair or replacement.

Private Plumbing System – all plumbing located on the downstream side of the water meter including pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances used to move water from the COMPANY potable water system to the Stockholder's property.

Reduced Pressure Principle Assembly (RP) – a testable assembly that conforms to ASSE standard 1013 consisting of (2) independently operating check valves with an automatically operating differential relief valve. The assembly will operate to maintain the pressure in the zone between the (2) check valves at a level less than the pressure on the COMPANY water supply side of the assembly. In case of leakage of either of the check valves, the differential relief valve will operate to maintain the reduced pressure in the zone between the check valves by discharging to the atmosphere. Before the pressure between the check valves is within 2psi of the inlet pressure, the relief valve will open to the atmosphere. RP assemblies must be readily accessible for testing and maintenance and must be installed in a location where no part of the assembly will be submerged.

Reduced Pressure Detector Assembly (RPDA) – a specially designed assembly that conforms to ASSE standard 1047 consisting of a line-size approved RP with a protected bypass containing a specific water meter. The meter shall register accurately for rates of flow up to 2gpm and shall show a registration for all rates of flow. RPDA assemblies must be readily accessible for testing and maintenance and must be installed in a location where no part of the assembly will be submerged.

Stand-Alone Sprinkler System – a sprinkler system where the aboveground piping serves only fire sprinklers. Approved backflow prevention is required.

Submerged Inlet – a water pipe or extension thereto from the COMPANY water supply terminating in a tank, vessel, fixture, or appliance which may contain water of questionable quality, waste, or other substances and which is unprotected against backflow.

Suspension of Service – termination of domestic and/or fire suppression water service due to noncompliance with CDPHE regulations or COMPANY policies.

Vacuum – any pressure less than that exerted by the atmosphere.

Vacuum Breaker – any backflow preventer that introduces atmospheric pressure into the plumbing system or plumbing fixture to stop water from being siphoned backward.

Water Service Connection – the terminal end of the COMPANY service connection from the COMPANY potable water system (i.e., at the Stockholder's stop box shut-off valve or meter). If a meter is installed at the end of the service connection, then the service connection means the downstream end of the meter. Any unprotected takeoffs from the service line ahead of the meter or backflow preventer located at the point of delivery to the Stockholder's private plumbing system is prohibited. Service connection will also include water service connections from a fire hydrant and all other temporary or emergency water service connections from the COMPANY potable water system.

REQUIREMENTS

2.0 Water System.

The COMPANY water system consists of the source and distribution system to the point of the Stockholder's private plumbing system. The source includes all components of the facilities utilized in the production, treatment, storage, and delivery of water to the distribution system. The distribution system includes the network of pipelines used for the delivery of water from the source to the Stockholder's system. The Stockholder's system begins at the water service connection.

2.1 Surveys.

- A. The Meter Department must conduct official onsite surveys for all applicable water service accounts to determine whether the COMPANY potable water system is at risk or has the potential to be at risk of any contaminants or pollutants entering the COMPANY potable water system from backpressure or backsiphonage. Accounts without the highest level of backflow protection at the service line are required to be reinspected every 3-5 years, though the COMPANY reserves the right to reinspect any water service account at its discretion.
- B. Should the Meter Department determine a water service account poses an actual or potential risk to the COMPANY water system, the Stockholder shall complete all required corrections or backflow preventer installations at their sole expense within the given compliance period.
- C. The Meter Department will be notified through the CMWC Tap Sales Department of all applicable properties that apply for a change of use. Properties without the highest form of backflow protection at the service line will require a resurvey.

2.2 Installations.

- A. An approved backflow preventer will be installed at or near the property line or immediately inside the structure being served; but, in all cases, before the first branch leading off the service line, or at a specific hazard wherever any of the following conditions exist:
 - 1. It is a commercial property where potential or existing hazards are present.
 - 2. It is a multi-family residential property with one water meter that serves 3 or more units where potential or existing hazards are present.
 - 3. It is a residential property operating a business where potential or existing hazards are present.
 - 4. It is any property with a fire suppression system that utilizes chemical additives.
 - 5. It is any residential property with a multipurpose or passive purge fire suppression system that is not properly designed to preserve water quality to the potable water standards.

6. It is any property utilizing COMPANY water service for agricultural activities (i.e., growing crops, rearing livestock) where potential or existing hazards are present.
 7. It is any property utilizing COMPANY water service where a known and unprotected hazard has been observed.
 8. It is any new construction project for multi-family, commercial, industrial, agricultural, or irrigation water services.
 9. In the case of premises having an auxiliary water source which is not or may not be of safe bacteriological or chemical quality and which is not acceptable as an additional source by the COMPANY.
 10. In the case of premises in which any industrial fluids or any other objectionable substance is handled in such a fashion as to create an actual or potential hazard to the COMPANY potable water system. This will include the handling of process waters and waters originating from the COMPANY potable water system which have been subject to deterioration in quality.
 11. In the case of premises having internal cross connections that cannot be permanently corrected and controlled, or having intricate plumbing and piping arrangements, or where entry to all portions of the premises is not accessible for inspection purposes making it impracticable or impossible to ascertain whether dangerous cross connections exist.
 12. In the case of construction or other projects that utilize the COMPANY potable water system or appurtenances to the COMPANY potable water system.
- B. Parallel backflow prevention assembly installations are required for all critical services. CMWC highly advises consulting with a licensed plumber to verify any hydraulic requirements when designing the parallel installation.
- C. Complete lists of approved backflow preventer models are available upon request through the Meter Department when provided with the connection size and orientation needed. Certified backflow tester reference lists are also available upon request.
- D. Replacement backflow preventers must be lead-free USC approved RP assemblies unless otherwise approved by the Meter Department.
- E. An authorized CMWC representative must be present to witness the initial testing of all new or replacement backflow preventers for containment or containment-by-isolation protection**
- F. Backflow preventers are to be installed in readily accessible and safe location to facilitate inspection, testing, and maintenance. Adequate drainage must be provided in the event that water is discharged at minimum and maximum rates. Backflow preventers shall not be installed in areas with hazardous gases, extreme temperatures, underground, or locations that are not readily accessible.
- G. Approved backflow preventers shall be installed by a licensed plumber in accordance with the manufacturer's specifications and only in the USC approved orientation., though in no case shall the assembly be installed less than 12-inches above the surrounding ground or floor. Applicable backflow preventers must also maintain a proper air gap at least 2X the connection size, but no less than 1-inch, between the bottom of the assembly and any flood level rims.
- H. The installation of a backflow preventer will create a closed plumbing system and any backpressure created within a private plumbing system may cause excess stress on the piping or plumbing fixtures. CMWC highly advises consulting with a licensed plumbing professional to avoid potential damage to the private plumbing system.
- I. In the case of a property required to install a backflow preventer where an unauthorized tap has also been discovered in the water meter pit, the removal of the unauthorized tap will be required in addition to the backflow preventer installation. The removed tap can be reinstalled in the private plumbing system a minimum of 5ft downstream from the water meter pit. NO soldering is permitted when making corrections in the meter pit, which must have a final inspection and receive approval from an authorized CMWC representative.

2.3 Backflow Preventers.

- A. Any backflow preventer required herein will be of a model and size approved by the Meter Department (full lists available upon request).
- B. Backflow preventers currently installed which are not approved shall be replaced with a lead-free USC approved backflow prevention assembly within 60 days of notification unless otherwise approved by the Meter Department.

- C. The following testing laboratory has been qualified by the Meter Department to test and certify backflow prevention assemblies:

Foundation for Cross-Connection Control and Hydraulic Research
University of Southern California
University Park
Los Angeles, CA 90089-0231

- D. Testable backflow preventers that may be subjected to backpressure or backsiphonage that have been fully tested and have been granted a certificate of approval by said qualified laboratory and are listed on the laboratory's current list of "Approved Backflow Prevention Assemblies," as well as newly installed approved backflow preventers which have been inspected and installed to the satisfaction of the Meter Department are deemed to be in compliance with this program. Compliance confirmation letters are available upon request.

2.4 Testing, Reporting, and Record-Keeping.

- A. It is the responsibility of the Stockholder to have all backflow preventers tested by an ASSE or ABPA certified backflow tester upon installation, after any repairs or maintenance, and at least once per year thereafter (tester reference list available upon request). The Stockholder shall ensure that the tester/testing company properly submits their results no later than the annual due date. The Meter Department may require testing at more frequent intervals and reserves the right to perform random testing on any backflow prevention assembly.
- B. Annual test due dates will not be altered based on delinquent testing. Stockholders can request due date changes through the Meter Department so long as the backflow preventer(s) had passing test results the previous calendar year.
- C. Required irrigation backflow prevention assemblies must be tested at the beginning of spring each year to ensure the internal components will operate correctly throughout the season.
- D. The certified backflow tester or backflow testing company must submit all test results through our online portal (cmwc.tokaytest.com) and to the Stockholder or designee. Testers and testing companies can set up an online account by contacting the Meter Department. New or updated tester certification and test gauge calibration documents must be provided to the Meter Department in a timely manner**
- E. Test results must be accurately submitted with the correct tester and test gauge selections. Inaccurate submissions must be reported to the Meter Department immediately**
- F. Test results must be properly submitted within 5 business days following the completion of a passing test or maintenance of a backflow preventer. The certified backflow tester shall also attach a card/tag to the backflow preventer following each test or maintenance activity to document the activities performed. Records of all tests or maintenance activities, including materials and parts changed, shall be kept by the certified backflow tester, the property Stockholder, and the Water Distribution Manager for a period of at least three years**
- G. Verbal or written notification must be given to the Meter Department within 24 hours for all failed containment or containment by isolation tests via phone (303-274-7433) or email (Backflow@cmwc.net). The failed reports must be properly submitted within 3 business days of the failed test**
- H. No testing company shall delay test result submissions for any reason**
- I. The COMPANY reserves the right to refuse tests from certified backflow testers who have not displayed honest and appropriate testing or reporting.
- J. All required repairs or replacements must be completed within 10 business days unless otherwise approved by the Meter Department and at the expense of the Stockholder to avoid water service interruptions. Repairs must only be made with manufacturer and model specific repair parts. The Meter Department reserves the right to expedite the repairs based on the degree of hazard that the backflow preventer is protecting.

2.5 Backflow Testing Accountability Program.

- A. All backflow testing companies will be required to meet with the CMWC Backflow Prevention Department and submit a signed Backflow Testing Agreement prior to February 1, 2023 in order to maintain an active status. Testing companies that do not meet with the CMWC Backflow Prevention Department and/or do not submit a signed agreement prior to February 1, 2023 will be placed on a 'Hold' which would prohibit testing or result submissions for assemblies in the CMWC service area. The 'Hold' would remain in place until the meeting and agreement requirements are properly completed.
- B. Policies that could lead to a violation have been noted with an asterisk (**). It is highly advised that special attention should be given to those particular policies.
- C. Violations of the CMWC Backflow Prevention Policy will be handled as follows:
- 1st Violation – A certified letter will be sent to the testing company specifying what part of the CMWC Backflow Prevention Policy had been violated and that a 2nd violation will include a monetary fine. A (1) year review begins. The Stockholder on the account(s) will also be notified of the violation.
 - 2nd Violation – A certified letter will be sent to the testing company specifying what part of the CMWC Backflow Prevention Policy had been violated. This letter would also advise the testing company that they have been placed on a 'Hold' until a \$1,000 fine has been paid.
 - 3rd Violation – A certified letter will be sent to the testing company specifying what part of the CMWC Backflow Prevention Policy had been violated. This letter would also advise the testing company that they have been placed on a 'Hold' until a \$2,000 fine has been paid AND the testing company attends a final meeting with the Meter Department. An extension of up to 6 months will be added to the review process.
 - 4th Violation – A certified letter will be sent to the testing company specifying what part of the CMWC Backflow Prevention Policy had been violated. This letter would also advise the testing company that they are officially prohibited from testing any backflow assemblies within the CMWC service area.

****Reinstatement requests will be handled on a case-by-case basis after an official request form is submitted to the CMWC Meter Department for review****

COMPLIANCE AND ENFORCEMENT

3.0 Compliance.

The standard compliancy periods are as follows:

<u>Survey:</u>	By or before the 'Due Date' stated on the CMWC survey request notice
<u>Installation:</u>	Within 60 days of a failed survey unless otherwise approved by the Meter Department
<u>Testing:</u>	Annually, upon installation, and after any maintenance or repairs
<u>Repair:</u>	Within 15 business days of a failed backflow test or assembly malfunction unless otherwise approved by the Meter Department

Noncompliance with any backflow requirements will result in the termination of water service

3.1 Enforcement.

- A. Accounts that are delinquent on any backflow compliance requirements will have the domestic and/or fire water service discontinued until the contractor contacts the Meter Department directly to verify when the account is expected to be in compliance via phone (303-274-7433) or email (Backflow@cmwc.net) between 730AM-330PM Monday-Friday before water service will be restored. The Authority Having Jurisdiction will be notified of all fire water service suspensions.

- B. Water services that are discontinued for 30 days or more will require the testing company to schedule an appointment for service restoration and an authorized CMWC representative must witness testing. Appointments must be scheduled with at least 48hrs notice.
- C. A penalty fee of \$100 will be assessed to the Stockholder's account for any removed or damaged locking devices that the COMPANY uses to terminate service for noncompliance. Continuous violation of the service termination may result in civil and/or criminal charges.
- D. The COMPANY reserves the right to prohibit any certified backflow tester or testing company that does not comply with the CMWC Backflow Prevention Policy or Backflow Testing Agreement.

All variance requests must receive approval from the Meter Department in writing