



## **Golden Heart Utilities & College Utilities Corporation Cross-Connection Control Program**

### **Program Summary**

Golden Heart Utilities (GHU) and College Utilities Corporation (CUC) administers a cross-connection program consisting of surveying, inspection, record keeping, and testing of approved backflow prevention assemblies for customer service lines connected to the GHU and CUC water distribution systems. This program was initiated and is administered by GHU and CUC. This program, and its terms and conditions, are in place to illustrate the requirements for installation of approved backflow assemblies, and the related responsibilities for regular maintenance, inspection, and testing. The success of the program relies on shared responsibilities between the Utilities, certified testers and property owners. Significant parts of this program include annual inspection and testing of backflow assemblies by a certified tester. The property owner is responsible for the proper installation, maintenance, inspection, and testing of the assemblies and to ensure compliance with the GHU and CUC Backflow Prevention and Cross Connection Control Program requirements. Hereafter, Golden Heart Utilities and College Utilities Corporation will be referred to as the Utility.

It is the responsibility of the Utility to develop a cross-connection program that supports the prevention of drinking water contamination. Additionally, there is a shared responsibility for public health officials (involved in drinking water), plumbing inspectors, building managers and plumbing installers to protect the public health and safety of individuals from contamination of the public water supply system. Lastly, the customer shall also be responsible for preventing contaminants from being introduced to the Utility water system from their premises.

Approved backflow prevention assemblies shall be installed in any premises where, in the judgment of the Utility, the nature and extent of activities, or the materials used or stored on the premises, could present a hazard to the potable water supply in the event a cross-connection were to be made. The Utility uses containment as the primary method of protection.

### **Purpose**

To protect the public potable water supply served by the Utility from the possibility of contamination or pollution, within its customers' premise plumbing system, which could backflow into the public water system.

## **Authority**

The cross-connection program is administered under The Safe Drinking Water Act 1986 Amendments (40 CFR Part 141) with the Alaska Department of Environmental Conservation (18 AAC 80.025). The standards incorporated in this program are established by Fairbanks City Ordinance No. 6015 Plumbing Code, by adopting the 2015 Uniform Plumbing Code w/Local Amendments.

## **Applicability**

This cross-connection plan applies to customers serviced by the Utility. This plan also serves as a guide for local stakeholders that conduct any activities, directly or indirectly, that may have an impact on the Utility's water system infrastructure; particularly any associated cross-connection configurations.

## **Risk Determination**

It is important for the Utility to identify activities that pose the highest risk to the water system, in order to prioritize efforts to protect the water system. The Utility implements effective backflow prevention measures that are commensurate with the degree of hazards. Therefore, appropriate backflow prevention assemblies shall be installed in any premises where, in the judgment of the Utility, the nature and extent of activities pose a high risk to the water system. Given the inherent risk with the activities associated with the facilities listed below, backflow prevention assemblies are required for the following:

- Medical Facilities
- Mortuaries
- Metal Plating Industries
- Food Processing Services
- Manufacturing Facilities
- Radioactive Material Handling
- Car Wash Facilities
- Fire Sprinkler Systems
- Sand, Rock, Gravel and Concrete Plants
- Greenhouses, Large Irrigation Systems
- High Rise Buildings (above 3 stories) – Requiring Booster Pumps
- Laundries and Dry Cleaners
- Gas Stations
- Bulk Water Distribution
- Power Plants
- Auxiliary Water Systems

The Utility has the discretionary authority to determine the hazard level. Therefore, the Utility may require backflow protection at the service connection even though all internal cross-connections are

protected properly. In some cases, the fact that there are hazards on the premises may be the single factor when deciding the need for backflow protection at the service connection.

### **New Service Connections**

New water services may be required to have the proper backflow prevention if deemed necessary by the Utility. New hook-ups will require both the user and Utility personnel to be present at the time of installation. If an approved backflow prevention assembly is not available at the time of the initial appointment, service will be denied by the Utility. The customer will have to schedule another appointment to finish installation.

### **Existing Connections**

For existing water services, the Utility may conduct surveys to identify hazards. The customer shall allow their property to be inspected. If the need for cross-connection protection is identified, the Utility will proceed with notification procedures. The customer is responsible for the installation of the backflow prevention assemblies. The assemblies must conform to *ANSI/AWWA Standards C510-97, Double Check Valve Backflow Prevention Assembly and/or Reduced-Pressure Principle Backflow Prevention Assembly*. Additionally, backflow assemblies shall be installed in a manner that provides protection from flooding and freezing by a method approved by the Utility. The Utility may aid with pre-approval of any backflow assembly provided by the customer. If the Utility discovers an assembly that does not conform to the standards above, the equipment will be removed at the customer's expense.

The customer shall obtain written approval from the Utility, before any proposed corrective action or modification of a backflow assembly installation.

It may not be necessary to conduct additional surveys if the backflow protection at the service connection is a Reduced Pressure Zone Valve.

### **Fire System Connections**

Backflow prevention is required for all services connected to a fire sprinkler system. Piping up to the backflow preventer discharge in the sprinkler tree must comply with Utility specifications. The installation of a fire booster pump is prohibited on the Utility's water systems without advance written approval from the Utility. An approved backflow preventer assembly (at minimum - a DCVA, Chemical Introduction requires RPBA) shall be installed in the sprinkler line, to prevent reintroduction of aged fire-line water into the customer's domestic water branch or into the Utility's system. A separate isolation valve must be placed in the fire line upstream of the backflow preventer assembly. The valve must be provided in addition to integral isolation valves that may be included as part of a backflow preventer assembly.

### **Water Heaters and Boiler Connections**

The Utility has discretionary authority to determine the hazard level, and the type of backflow assembly required at any connected facility. It is important to understand that a backflow assembly or dual check valve may induce pressure relief valves, attached to water heaters or boilers, to 'pop-off' continuously due to thermal expansion. It is the customer's responsibility to ensure that internal plumbing, fixtures and equipment are connected to thermal expansion tanks of the appropriate type as required by the Uniform Plumbing Code 608.3. Failure to do so may risk injury or cause damage to customer's property.

## **Record Keeping**

The Utility will maintain records of surveys, inspections and testing. Additionally, the Utility will keep all required documentation for any Utility owned backflow prevention assembly. Customers shall also maintain accurate records of annual tests and repairs of backflow prevention assemblies and shall forward a copy of these records to:

### By Mail:

GHU/CUC Customer Service Department

P.O. Box 80370

Fairbanks, AK 99708

### By Email:

[Backflow@akwater.com](mailto:Backflow@akwater.com)

### By Fax:

(907) 474-0619 Attn: Backflow Program

### Or in person:

3691 Cameron Street Suite 201,

Fairbanks, AK 99709.

## **Noncompliance and Enforcement**

The Utility may conduct surveys and inspections to identify risk to the overall system. The Utility is responsible for the inspection of piping and appurtenances from the main to the discharge connection of the dual check valve/backflow preventer assembly immediately downstream of the Utility meter, and the discharge of the fire service backflow preventer. A customer shall permit, properly identified Utility employees, to enter the customer's premises at all reasonable hours for inspection, sampling, testing or records examination. The Utilities may inspect a customer's facilities to determine system integrity and compliance with the requirement of our tariff and the provisions of the City of Fairbanks General Code related to the Utility's service or the Uniform Plumbing Code. If the results to any of the surveys or inspections reveal the need for backflow prevention, the customer will be notified in writing of any corrective action. As part of this program, the Utility has set up guidelines for penalties for noncompliance (Appendix A), to include basic deadlines to achieve compliance. However, in all cases if a cross-connection has not been removed, after a reasonable period of time, the Utility shall physically separate the public water supply from the on-site piping system in such a manner that the two systems cannot again be connected by any unauthorized person.

The customer shall not install a bypass around any backflow preventer unless there is a backflow preventer of the same type on the bypass. Customers who cannot shut down operation for testing must supply additional backflow assemblies necessary to allow testing to be adequately conducted and completed.

If the customer fails to comply with backflow requirements, the Utility may take actions to remedy the problem. Once noncompliance is identified, the Utility's first step will include efforts to develop a plan of action with the customer. The Utility can customize an action plan for any customer based off their unique circumstances. The primary focus for the Utility will always remain on the safety of the water system. If the customer fails to contact the Utility, after required notifications, the Utility may proceed to initiate disconnection procedures.

If the Utility determines at any time that a serious threat to the public health exists, the water service will be terminated immediately, and the responsible party will be billed for the full cost of work.

### **Inspection and Testing**

The customer shall have the backflow prevention assembly tested by a certified backflow assembly tester at the time of installation, repair, or modification and annually thereafter. The installer/tester's responsibility is to make proper installation of approved backflow prevention assemblies, in accordance with the manufacturer's installation instructions and the Utility's Service Line Standards. The installer/tester shall test the assembly to ensure they are in proper working order. All testers, performing backflow assembly testing on the Utility's system, shall furnish the test results along with the information listed to the Utility's Customer Service Department within 15 days of installation and/or repair and before their due date of the annual inspection thereafter. The following information will need to be included:

1. Address where assembly is located
2. Owner address and telephone number
3. Description of usage, location, and size
4. Date of installation
5. Type of assembly
6. Manufacturer
7. Model Number
8. Assembly tester name, company, certification number; address, and a current calibration date for testing equipment.

Any backflow preventer which fails during testing must be repaired or replaced. All failing results must be forwarded to the Utility within 10 days of inspection. Upon completion of the repair or replacement, the assembly will be re-tested at owner's expense. High hazard situations will not be allowed, by the Utility, to continue unprotected if the backflow preventer fails the test and cannot be repaired immediately. The Utility may establish more frequent testing based on site specific conditions and the degree of hazard associated with any account.

According to 18 AAC 80.010(b), the owner of the public water system may delegate the installation, maintenance, and testing of the backflow prevention assembly to the operator/owner of the facility that poses any substantial risk. This delegation applies to independent certified installers and testers. Certified installers and testers must be licensed by the appropriate certifying body and their license must not be expired. Any backflow device installed or inspected on the Utility's system, must conform to the Utility standards; must be documented and shall be forwarded using the contact information contained in the record keeping section of this plan. If an installation and/or inspection is conducted by an improperly certified professional, the Utility will not consider the results valid even if the equipment

passes the inspection. Other reasons that may cause invalidation of an installation and/or inspection would be an expired tester license, improper interpretation of the Utility's standards, missing information on inspection forms or failure to properly notify the Utility. It is the customer's responsibility to ensure that all work completed is conducted by an appropriate professional that meets Utility's standards.

### **Customer Assistance**

Upon request, the Utility will provide relevant information to the customer in order to initiate and maintain compliance. This information may include but is not limited to; historical information pertaining to their property, acceptable backflow protection assembly and/or a list of private contractors that are certified backflow assembly testers. Additional general cross-connection program information will be posted on the Utility website, to include this plan.

### **Emergency Information**

In the event of accidental contamination of the Utility's potable water supply, due to backflow on or from the customer's premises, the owner shall promptly take steps to confine further spread of pollution or contamination, if it can be done safely. Additionally, the customer shall immediately notify the Utility at 479-3118 of the hazardous condition. In the event of an emergency, the Utility shall take all necessary steps to protect the water system and water service.

### **Definitions**

Backflow - The flow of water or other liquids, mixtures, or substances into the distributing pipes of a potable supply of water from any sources other than its intended source.

Backsiphonage - Is a sub-atmospheric pressure loss in the water line causing the flow of water to travel along the least resistant path.

Back Pressure - Backpressure occurs when both systems (potable & nonpotable) are under pressure (above atmospheric pressure or positive head pressure), but the nonpotable system has a greater pressure than the potable system.

Certified Backflow Assembly Tester - A person certified by ASSE or ABPA or AWWA to test backflow prevention assemblies.

Containment - A method of backflow prevention, which requires an approved backflow prevention assembly at the water service entrance.

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

Cross-Connection - Any connection or arrangement, physical or otherwise, between a potable water supply system and any plumbing fixture or any tank, receptor, equipment, or device, through which it may be possible for non-potable, used, unclean, polluted and contaminated water, or other substances to enter into any part of such potable water system under any condition

Double-Check Valve Assembly - A backflow prevention consisting of two internally spring loaded independently operating check valves, located between two tightly closing resilient seated shutoff valves with four properly placed resilient-seated test cocks.

Fire Booster Pump - Booster pumps are designed to smooth out water pressure in areas where the flows are highly variable, particularly for fire protection systems.

Reduced Pressure Zone Valves (RPZs) - A backflow prevention assembly consisting of a mechanically independent acting, spring loaded, hydraulically operated pressure relief valve, located between two independently operated, internally spring-loaded check valves that are located between two tight closing resilient-seated shutoff valves with four properly placed resilient seated test cocks.

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

Utility – Golden Heart Utilities Inc. and College Utilities Corporation Water Departments – or their duly appointed representative.

## APPENDIX A

UTILITY CROSS-CONNECTION PENALTIES				
Violation				
<b>Initial Appointment Missed</b>	Cost of the visit - if customer fails to reschedule or contact the Utility prior to inspection.	*Additional penalties may apply if the circumstances fit another category below.		
	Initial 90 days	2 <sup>nd</sup> 90 days	6 months (after initial {2} 90-day periods)	Over final 6-month period
<b>Unauthorized cross connection</b>	The Utility shall notify customer by letter upon discovery.	<p>*The Utility shall fine the customer no more than \$100 at the end of the 1<sup>st</sup> 90 days.</p> <p>*The Utility shall issue a warning letter including a deadline and potential penalties.</p>	<p>* The utility shall issue a violation letter - \$500 Fine and a disconnect date.</p> <p>**Disconnect activities may commence. (At the discretion of the Utility)</p>	*\$20 a day if needed.
<b>Improper Installation</b>  (Incorrect equipment, equipment installed incorrectly, damaged assemblies)	The Utility shall notify customer by letter upon discovery.	<p>*The Utility shall fine the customer no more than \$100 at the end of the 1<sup>st</sup> 90 days.</p> <p>*The Utility shall issue a warning letter including a deadline and potential penalties.</p>	<p>* The utility shall issue a violation letter - \$500 Fine and a disconnect date.</p> <p>**Disconnect activities may commence. (At the discretion of the Utility)</p>	*\$20 a day if needed.
<b>Failure to Meet Annual Inspection Requirements</b>	The Utility shall notify customers by letter on or after due date.	<p>*The Utility shall fine the customer no more than \$50 at the end of the 1<sup>st</sup> 90 days.</p> <p>*The Utility shall issue a warning letter - including a deadline and potential penalties.</p>	<p>* The utility shall issue a violation letter - \$500 Fine and a potential disconnect date.</p> <p>**Disconnect activities may commence. (At the discretion of the Utility)</p>	*\$20 a day if needed.

\* The Utility may develop an individual schedule and associated timeline for customers who contact the Utility with unique circumstances.

\*\* Costs for disconnects are the responsibility of the customer. Additionally, the disconnection and estimated reconnection costs, the delinquent amount, or any other Utility cost must be paid before the service is restored.



## APPENDIX B

# American Society of Sanitary Engineering

## Double Check Backflow Prevention Assembly (DC)

### ASSE Standard #1015 Field Test Report

Owner of Property \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_  
 Occupant of Property (if different from owner) \_\_\_\_\_  
 Occupant Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Manufacturer of Device: \_\_\_\_\_ Model #: \_\_\_\_\_  
 Size of Device: \_\_\_\_\_ Serial #: \_\_\_\_\_  
 Location of Assembly and Equipment or System Application: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Test Equipment:  
 Manufacturer: \_\_\_\_\_ Model #: \_\_\_\_\_ Serial #: \_\_\_\_\_  
 Calibration Date: \_\_\_\_\_

Date test was performed: \_\_\_\_\_ Time test was performed: \_\_\_\_\_ Static Line Pressure: \_\_\_\_\_

	Check Valve #1	Check Valve #2	Shutoff valve #2
<b>Initial Test</b>	Leaking <input type="checkbox"/> psid _____ Closed Tight <input type="checkbox"/>	Leaking <input type="checkbox"/> psid _____ Closed Tight <input type="checkbox"/>	Leaking <input type="checkbox"/> Closed Tight <input type="checkbox"/>
<b>Describe parts and repairs when needed</b>			
<b>Final Test</b>	Leaking <input type="checkbox"/> psid _____ Closed Tight <input type="checkbox"/>	Leaking <input type="checkbox"/> psid _____ Closed Tight <input type="checkbox"/>	Leaking <input type="checkbox"/> Closed Tight <input type="checkbox"/>

Certified Tester (print) \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Phone #: \_\_\_\_\_  
 License #: \_\_\_\_\_ Certification # \_\_\_\_\_

**Assembly Final Test Performance**

Pass   
 Fail

Signature \_\_\_\_\_ Date: \_\_\_\_\_

Comments or Recommendations (continue to other side, if needed): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## APPENDIX C

# American Society of Sanitary Engineering

## Reduced Pressure Principle Backflow Preventer (RP)

### ASSE Standard #1013 Field Test Report

Owner of Property \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_  
 Occupant of Property (if different from owner) \_\_\_\_\_  
 Occupant Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_  
 Manufacturer of Device: \_\_\_\_\_ Model #: \_\_\_\_\_  
 Size of Device: \_\_\_\_\_ Serial #: \_\_\_\_\_  
 Location of Assembly and Equipment or System Application: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Test Equipment:  
 Manufacturer: \_\_\_\_\_ Model #: \_\_\_\_\_ Serial #: \_\_\_\_\_  
 Calibration Date: \_\_\_\_\_

Date test was performed: \_\_\_\_\_ Time test was performed: \_\_\_\_\_ Static Line Pressure: \_\_\_\_\_

	Check Valve #2	Shutoff valve #2	Check Valve #1	Pressure Differential Relief Valve
<b>Initial Test</b>	Leaking <input type="checkbox"/> Closed Tight <input type="checkbox"/>	Leaking <input type="checkbox"/> Closed Tight <input type="checkbox"/>	Leaking <input type="checkbox"/> Closed Tight <input type="checkbox"/> Pressure Drop Across Check Valve #1 _____ psid	Opened at _____ psid
<b>Describe parts and repairs when needed</b>				
<b>Final Test</b>	Leaking <input type="checkbox"/> Closed Tight <input type="checkbox"/>	Leaking <input type="checkbox"/> Closed Tight <input type="checkbox"/>	Leaking <input type="checkbox"/> Closed Tight <input type="checkbox"/> Pressure Drop Across Check Valve #1 _____ psid	Opened at _____ psid

Certified Tester (print) \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Phone #: \_\_\_\_\_  
 License #: \_\_\_\_\_ Certification # \_\_\_\_\_

**Assembly Final Test Performance**

Pass   
 Fail

Signature \_\_\_\_\_ Date: \_\_\_\_\_

Comments or Recommendations (continue to other side, if needed): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## APPENDIX D

# American Society of Sanitary Engineering

## Pressure Vacuum Breaker Assembly (PVB)

### ASSE Standard #1020 Field Test Report

Owner of Property \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_  
 Occupant of Property (if different from owner) \_\_\_\_\_  
 Occupant Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Manufacturer of Device: \_\_\_\_\_ Model #: \_\_\_\_\_  
 Size of Device: \_\_\_\_\_ Serial #: \_\_\_\_\_  
 Location of Assembly and Equipment or System Application: \_\_\_\_\_

Test Equipment:  
 Manufacturer: \_\_\_\_\_ Model #: \_\_\_\_\_ Serial #: \_\_\_\_\_  
 Calibration Date: \_\_\_\_\_  
 Date test was performed: \_\_\_\_\_ Time test was performed: \_\_\_\_\_ Static Line Pressure: \_\_\_\_\_

	Air Inlet Valve	Check Valve	Shut Off #2
<b>Initial Test</b>	Failed to Open _____ Opened at _____ psid	Leaking <input type="checkbox"/> Closed Tight <input type="checkbox"/> Pressure Drop Across Check Valve #1 _____ psid	Leaking <input type="checkbox"/> Closed Tight <input type="checkbox"/>
<b>Describe parts and repairs when needed</b>			
<b>Final Test</b>	Opened at _____ psid	Leaking <input type="checkbox"/> Closed Tight <input type="checkbox"/> Pressure Drop Across Check Valve #1 _____ psid	Leaking <input type="checkbox"/> Closed Tight <input type="checkbox"/>

Certified Tester (print) \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Phone #: \_\_\_\_\_  
 License #: \_\_\_\_\_ Certification # \_\_\_\_\_

**Assembly Final Test Performance**

Pass   
 Fail

Signature \_\_\_\_\_ Date: \_\_\_\_\_

Comments or Recommendations (continue to other side, if needed): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_