



BACKFLOW/CROSS CONNECTION POLICY

[Effective Date: 11/16/2022]

Introduction:

WHEREAS, it is authorized by Utah's Safe Drinking Water Act, Title 19, Chapter 4, Utah Code Annotated, and applicable State Regulations, including the current version of the "Cross Connection Control Program of Utah, April 2016" a copy of which shall be available \ on the web at <https://documents.deq.utah.gov/drinking-water/field-services/DDW-2017-010179.pdf>, and in the public interest to protect the quality of water supplied to the consumers of the Leeds Domestic Water Users Association, hereafter referred to as "LDWA";

WHEREAS, the shareholder drinking water system operated by the LDWA is a community water system, which maintains compliance with the policies and regulations of the Utah Drinking Water Board, hereafter referred to as the "DWB" and the International Plumbing Code, hereafter referred to as the "IPC";

WHEREAS, restrictions on water connections are necessary to prevent contamination of the water provided to the consumers of culinary water as a result of cross connections with the LDWA's drinking water system;

NOW THEREFORE, be it resolved by the LDWA that the following policy be adopted.

1 General Policy

1.1 Purpose.

The purpose of these Rules and Regulations is:

- a. To protect the LDWA water supply system from contamination by pollutants by isolating, within the shareholder's water system, contaminants or pollutants which could backflow through the service connection into the LDWA's water supply system.
- b. To promote the elimination or control of existing cross-connections, actual or potential, between the public or shareholder's potable water system and non-potable water systems, plumbing fixtures, and/or sources or systems containing process fluids.
- c. To provide for the maintenance of a continuing program of cross-connection control which will systematically and effectively prevent the contamination or pollution of the LDWA's and shareholder's potable water system.

1.2 Application.

These Rules and Regulations shall apply to all premises and connections served by the water supply system of the LDWA.

1.3 Policy.

LDWA and the Shareholder have joint responsibility for the protection of the LDWA water supply system from contamination due to backflow of contaminants through the water service connection. It is the policy of the LDWA that all Shareholders shall be required to install and maintain approved backflow prevention device(s) where specified.

2 Definitions

Air Gap Separation – the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying potable water to a tank, plumbing fixture, or other device and the flood level rim of the receptacle. The differential distance shall be at least double the diameter ($2 \times D$) of the supply pipe measured vertically above the top of the rim of the vessel. In no case, shall the air gap be less than one (1) inch. Larger separation may be required by the LDWA if specific circumstance warrant. The LDWA shall be the sole judge of such requirement.

Approved - a backflow prevention device or method has been accepted by the LDWA as suitable for the proposed use.

Atmospheric Vacuum Breaker - "atmospheric vacuum breaker" (also known as the non-pressure type vacuum breaker) shall mean a device containing a shut-off valve followed by a valve body containing a float-check, a check seat, and an air inlet port. When the shut-off valve is open, the flow of water causes the float to close the air inlet port. When the shut-off valve is closed, the float falls and forms a check valve against: back-siphonage and at the same time opens the air inlet: port.

Auxiliary Water System - any water source or system on the premises of or available to the customer.

Backflow - a flow condition induced by a differential in pressure that causes the flow of water or mixtures of water and other liquids, gases, or other substances into the distribution pipes of a potable water supply system from a source other than its intended source.

Backflow Preventer – a device or other means which will prevent the backflow of water or liquids of questionable quality into the culinary water supply system.

Backsiphonage - the backflow of water or mixture of water and other liquids, gases, or other substances from a plumbing fixture or other customer source into the LDWA water supply system main due to a temporary negative or sub-atmospheric pressure within the LDWA water supply system.

Shareholder (Customer) - the owner or person in control of any premises supplied by or in any manner connected to the LDWA water system. Customer and Shareholder are synonymous.

Shareholder's Water System - any water system, located on the Shareholder's premises, supplied by or in any manner connected to the LDWA water supply system. A household plumbing system is considered to be a Shareholder's water system.

Containment - a cross-connection control which isolates the customer's entire facility from the LDWA water supply system so as to provide the protection necessary to prevent contamination of the LDWA water supply in the event of backflow from the customer's facility.

Contamination - the degradation of the quality of the culinary drinking water by wastewaters, processed fluids, or any water of a quality less than accepted drinking water quality to a degree which would create an actual hazard to the public health through poisoning or through the spread of disease. (See "Pollution" for expanded issues).

Cross-Connection – A plumbing arrangement allowing either a direct or indirect connection through which backflow, including back-siphonage, can occur between the culinary drinking water in the LDWA system and a system containing a source or potential source of contamination.

Degree of Hazard - an evaluation of the potential risk to health and the adverse effect upon the LDWA water supply system.

Double Check Valve Assembly - an assembly composed of two single, independently acting, check valves including tightly closing shut-off valves located at each check valve. May be installed in a dry vault underground.

Health Hazard - any condition, device, or practice in a water system or its operation that creates, or may create, a danger to the health and wellbeing of its users. The word "severe" as used to qualify "health hazard" means a hazard to the health of the user that could reasonably be expected to result in the significant morbidity or death.

Interchangeable Connection/Swing Connection - an arrangement or device that will allow alternate but not simultaneous use of two sources of water. A "Swing Connection" is the only approved interchangeable connection approved for use in shareholder irrigation systems with the potential to access either nonpotable water or potable water in the State of Utah.

Nonpotable Water - water not safe for drinking, personal, or culinary use.

Person - Any individual, partnership, association, company, corporation, municipality, municipal authority, political subdivision or any agency of federal or state government. The term includes the officers, employees, and agents of any partnership, association, company, corporation, municipality, municipal authority, political subdivision, or any agency of federal or state government.

Pollution - the presence in water of any foreign substance that tends to degrade its quality so as to constitute a 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 affects such water for domestic use. (Examples: any liquids, gasses, materials or substances which reduce the quality of the culinary water by changing the clarity or introduce a negative taste or smell).

Potable Water - water which is satisfactory for drinking, culinary, and domestic purposes and meets the requirements of the Department of Environmental Resources and the Department of Environmental Quality.

Process Fluids - any fluid or solution which may be chemically, biologically, or otherwise contaminated or polluted in a form or concentration such as would constitute a health, pollution, or system hazard if introduced into the LDWA or a Shareholder's water system. This includes, but is not limited to:

- a. Polluted or contaminated waters.
- b. Process waters.
- c. Used waters originating from the LDWA water system which may have deteriorated in sanitary quality.
- d. Cooling waters.
- e. Contaminated natural waters taken from wells lakes, streams, or irrigation systems.
- f. Chemicals in solution or suspension.
- g. Oils, gases, acids, alkalis, and other liquid and gaseous fluids used in industrial or other processes, or for firefighting purposes.
- h. Heating system waters from boilers or heat pumps.

Swing Connection – See Interchangeable Connection

Water Supplier – The organization that owns or operates a water system. For the purpose of these Rules and Regulations, Public Water Supplier shall mean the Leeds Domestic Waterusers Association (LDWA).

Reduced Pressure Zone (RPZ) Device; Reduced Pressure Principal Backflow Prevention Assembly (RP) - a minimum of two independently acting check valves, together with an automatically operated pressure differential relief valve located between the two check valves. During normal

flow and at the cessation of normal flow, the pressure between these two checks shall be less than the supply pressure. In case of leakage of either check valve, the differential relief valve by discharging to the atmosphere shall operate to maintain the pressure between the checks at less than the supply pressure. The unit must include tightly closing shut-off valves located at each end of the device, and each device shall be fitted with properly located test cocks. The unit must be tested yearly by a certified tester and test results must be registered with LDWA. RPZ/RP's must be installed above ground as per IPC requirements.

Service Connection - the terminal end of a service line from the LDWA water supply system. If a meter is installed at the end of the service, then the service connection means the downstream end of the meter.

System Hazard - a condition posing an actual or potential threat of damage to the physical properties of the public water system or the Shareholder's potable water system.

3 Cross-Connections Prohibited

No water service connection shall be installed or maintained to any premises where actual or potential cross-connections to the LDWA water supply system or consumer's water system may exist unless such actual or potential cross-connections are "abated or controlled" to the satisfaction of the LDWA in accordance with Utah State and IPC Standards.

No connection shall be installed or maintained whereby water from an auxiliary water supply may enter a shareholder's water system unless such auxiliary water supply and the method of connection and use of such supply shall have, been approved by the LDWA.

In the case of irrigation lines being supplied alternatively by either LDWA culinary water or another water source, a "Swing Connection" is the only acceptable connecting device, as per Utah State Law, that may be installed and utilized. In addition, an RP must be installed on the upstream side of the connection on the LDWA service line.

4 Survey and Investigations

The shareholder's premises shall be open at all reasonable times to the LDWA Water Supplier or its authorized representative(s) for the purposes of conducting surveys and investigations of water use practices within the consumer's premises to determine whether there are actual or potential cross-connections to the consumer's water system through which contaminants or pollutants could backflow into the public potable water system.

On request by the LDWA Water Supplier, the shareholder shall furnish information on water use practices within their premises.

It shall be the responsibility of the water consumer to conduct periodic surveys of water use practices on his premises to determine whether there are actual or potential cross-connections to his water system through which contaminants or pollutants could backflow into the public water supply system.

5 Where Protection is Required

An approved backflow prevention device shall be installed prior to the first branch line leading off each service line to a consumer's water system where, in the judgment of the LDWA Water Supplier, an actual or potential hazard to the public water supply system exists.

An approved backflow prevention device shall be installed on each service line to a consumer's water system.

An RP backflow prevention device shall be installed on each of the listed establishment's water connections to the LDWA system. This list is only representative. The LDWA retains the right to require an RP on any customer's connection to LDWA it deems necessary to maintain the integrity of the LDWA water quality.

RP's must be installed on the consumer's side of the LDWA water meter at the customer's expense and must be tested yearly with the testing report submitted to the LDWA Office. Institutional Facilities

- Hospitals, mortuaries, clinics, nursing homes.
- Churches, Temples, Mosques, and Synagogues.
- Office Buildings.
- Hospitals.
- Laboratories.
- Hotels.
- Educational Facilities.
- Industrial.
- Etc.
- a. Industrial/Manufacturing Facilities
 - Sewage treatment plants, sewage pumping stations, or stormwater pumping stations.
 - Electric power station.
 - Petroleum processing or storage plants.
 - Chemical plants.
 - Food or beverage processing plants.
 - Etc.
- b. Commercial/Retail Establishments
 - Restaurants.
 - Salons.
 - Laundromats.
 - Grocery/Supermarket.
 - Convenience Store.
 - Big Box/Superstore.
 - Specialty Store.
 - Department Store
 - Discount Store
 - Off-Price Retailer
 - Warehouse
 - Auto Repair Shops
 - Car wash or truck wash facilities.
 - RV Parks
 - Storage Facilities
 - Etc.
- c. Farming or Consumer Irrigation Systems
 - Irrigation Systems
 - Animal Watering Systems. (Protected Air Gaps at point of water injection as well as RP's may be required).

6 Type of Protection Required

The type of protection required under Section 53 of this Policy shall depend on the degree of hazard which exists as follows:

- a. An approved air gap separation shall be installed where the LDWA water supply system may be contaminated with substances that are dangerous to the public health and could cause a severe health hazard as determined by the LDWA Water Supplier.
- b. An approved air gap separation or an approved reduced pressure zone backflow prevention device (RP) or other approved Backflow prevention assembly or device shall be installed where the LDWA water supply system may be contaminated with a substance that could cause a system or health hazard.
- c. An approved air gap separation, or an approved reduced pressure zone backflow prevention device, (RP) or other approved Backflow prevention assembly or device such as an approved double check valve assembly shall be installed where the LDWA water supply system may be polluted with substances that would be objectionable but not dangerous to health. Screens must be installed on air gaps where required.

7 Backflow Prevention Devices

The type of protection required shall depend on the degree of hazard which exists as follows:

Any backflow prevention device required by these Rules and Regulations shall be of a model or construction approved by LDWA and shall comply with the following:

- a. Air gap separation to be approved shall be at least twice the diameter of the supply pipe, measured vertically above the top rim of the vessel, but in no case less than one inch.

- b. A double check valve assembly, a reduced pressure zone backflow prevention assembly (RP) and/or other approved assembly or device approved by the IPC and the LDWA and shall mean a device that has been manufactured in full conformance with standards established by the American Water Works Association entitled: AWWA C506 Standards For Reduced Pressure Principle and Double Check Valve Backflow Prevention Devices, (latest revision) Said AWWA standards are herein adopted by the LDWA. Final approval, however, of the "Reduced Pressure Principle Backflow Preventer" (RP) and the "Double Check Valve Assembly" shall be evidenced by a "Certificate of Full Approval" issued by an approved testing laboratory certifying full compliance with the said AWWA standards. All testing must conform to such certifications on an annual basis with a copy of such testing submitted to the LDWA Office for recording.

8 Installation

The type of protection required shall depend on the degree of hazard which exists as follows:

Any backflow prevention device required by these Rules and Regulations shall be of a model or construction such that:

- a. Backflow prevention devices required by these Rules and Regulations shall be Installed at a location and in a manner approved by the LDWA and the IPC and shall be installed by a person properly qualified and at the expense of the water consumer.
- b. Backflow prevention devices installed on the service line to a consumer's water system shall be located on the consumer's side of the water meter, as close to the meter as is reasonably practical, and prior to any other connection.
- c. Pits or vaults shall be of water-tight construction, be so located and constructed as to prevent flooding, and shall be maintained free from standing water by means of either a sump pump or a suitable drain. Such sump pump or drain shall not connect to a sanitary sewer nor permit flooding of the pit or vault by reverse flow from its point of discharge. An access ladder and adequate natural or artificial lighting shall be provided to permit maintenance inspection and testing of the backflow prevention device. Only "Double Check Valve" backflow devices

approved by AWWA for placement underground may be installed underground. All other devices must be installed above ground as per applicable specifications.

9 Inspection and Maintenance

It shall be the duty of the shareholder at any premises on which backflow prevention devices are required and installed by these Rules and Regulations to have inspections, tests, and overhauls of said devices or assemblies made in accordance with the following schedule or more often where inspections indicate a need.

- a. Air separation shall be inspected at time of installation and at least every twelve months thereafter.
- b. All testable backflow prevention devices or assemblies shall be inspected and tested every twelve months by a certified inspector and reports are to be submitted to the LDWA office for recording.
- c. Reduced pressure zone backflow prevention assemblies (RP) shall be inspected and tested to assure proper operation at the time of installation and at least every twelve months thereafter. They shall be dismantled, inspected internally, cleaned and repaired whenever needed and at least every five years.

Inspections, tests, and overhaul of backflow prevention devices shall be made at the expense of the water consumer and shall be performed by a person certified to inspect, test, and overhaul backflow prevention devices.

Whenever backflow prevention devices required by these Rules and Regulations are found to be defective, they shall be repaired or replaced at the expense of the consumer without delay.

The water consumer must maintain a complete record of each backflow prevention device from purchase to retirement. This shall include a comprehensive listing that includes a record of all tests, inspections, and repairs. Records of inspections, tests, repairs, and overhauls shall be submitted to the LDWA within one month of the required test/inspection date. When completed, all inspection reports shall contain the license number of the certified inspector or plumber with a copy being submitted to the LDWA for recording.

Backflow prevention devices shall not be bypassed, made inoperative, removed, or otherwise made ineffective without specific authorization by the LDWA.

10 Booster Pumps

Where a booster pump has been installed on the service line to or within any premises, such pump shall be equipped with a low pressure, cutoff device designed to shut-off the booster pump when the pressure in the service line on the suction side of the pump drops to ten pounds per square inch gauge or less for a period of 30 seconds or longer.

It shall be the duty of the water shareholder to maintain the low-pressure cut-of device in proper working order and to certify to the LDWA at least once a year that the device is operating properly.

11 Change of Property Ownership

Anytime a property changes ownership an inspection by an LDWA technician must be conducted to assure compliance with Cross Connection Requirements and to educate the new owner on those requirements.

The technician shall complete a standard report of the cross connection survey including any deficiencies giving a copy to the new property owner and submit a copy to the LDWA Office. Deficiencies must be corrected prior to water service being activated or by an agreed upon fixed date. Failure to complete the needed corrections by the date of compliance will result in termination of water service until such deficiencies are corrected and inspected by an LDWA technician.

12 Violations

The Public Water Supplier may deny or discontinue, after reasonable notice to the occupants thereof, the water service to any premises wherein any backflow prevention device required by these Rules and Regulations is not installed, tested, and maintained in a manner acceptable to the Public Water Supplier; or if it is found that: the backflow prevention device has been removed or by-passed; or if an unprotected cross-connection exists on the premises; or if a low pressure cut-off device required by these Rules and Regulations is not installed and maintained in working order.

Water service to such premises shall not be restored until the consumer has corrected or eliminated such conditions or defects in conformance with these Rules and Regulations and to the satisfaction of the LDWA. Costs associated with water shut-off and subsequent turn-on shall be paid for by the consumer.

The Safe Drinking Water Act (SWDA) empowered the Utah Department of Environmental Quality (DEQ) to impose various penalties upon individuals tampering with culinary water supply systems. These penalties are as follows:

- a. Any person who endangers the health of persons by knowingly introducing any contaminant into a public water system or tampering with a public water system shall be fined not more than \$50,000, or imprisoned for not more than five years, or both.
- b. Any person who attempts to endanger or makes a threat to endanger the health of persons by knowingly introducing any contaminant into a public water system or tampering with a public water system shall be fined not more than \$20,000, or imprisoned for not more than three years, or both.
- c. The Department may bring a civil action in the appropriate Court of Common Pleas against any person who endangers, attempts to endanger, or makes a threat to endanger the health of persons or otherwise renders the water unfit for human consumption by the introduction of any contaminant into a public water system or tampering with a public water system. The Court may impose on such person a civil penalty of not more than \$50,000, for each day that such endangerment or inability to consume the water exists.

The LDWA shall reserve the right to initiate any/all formal proceedings in accordance with the Safe Drinking Water Act (SWDA).