CITY OF CORTEZ

BACKFLOW PREVENTION AND CROSS-CONNECTION CONTROL

What is a Cross-Connection? Any physical arrangement whereby a potable water supply is connected, directly or indirectly, with any other water supply system, which contains, or may contain, contaminated water or substances, which may be capable of imparting, contaminating or polluting the potable water supply as a result of back-siphon, backflow, or backpressure.

1. ***Physical arrangement***: Bypass arrangements, jumper connections, removable spools, swivel or changeover assemblies, four-way valve connections, and other temporary or permanent assemblies through which, or because of which, a backflow can occur is considered to be a cross-connection.

2. ***Backflow*** is the undesirable reversal of the direction of the flow of water or mixtures of water (pollutants, or contaminants) into the distribution pipes of the potable water supply from any source or sources caused by backpressure and/or back-siphonage.

3. ***Back-siphonage*** is when the pressure in the distribution system drops, causing water from the consumer's system (and any hazardous substance) to siphon into the main water distribution system. This type of backflow can occur when there is an unusually high use of water of undersized piping in a particular area. For example, during fire fighting, water is "siphoned" to the point of high usage, possibly pulling non-potable substances with it into the water line.

4. ***Backpressure*** is when a pump, elevated tank, boiler, or "head" in a pipe creates pressure within a customer's piping system greater than the potable water supply pressure.

BACKFLOW DEVICES

1. ***Air-gap*** is the unobstructed vertical distance (twice the diameter of the pipe) through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, other assembly or vessel and the flood level rim of said vessel.

2. ***Atmospheric Vacuum Breaker (AVB)*** is a vacuum breaker consisting of an air inlet opening and a non-loaded floating disk valve designed to prevent back-siphonage only. The assembly shall not be subject to continuous static line pressure for more than twelve (12) continuous hours. AVB's are to be installed down- stream of the control valve and a minimum of six inches (6") above the highest outlet or sprinkler head.

3. ***Pressure Vacuum Breaker (PVB)*** is designed to prevent back-siphonage only, consisting of a spring-loaded check valve, a spring-loaded air inlet opening, a tightly closing shut-off valve on each side of the assembly, and two test cocks. This assembly is not designed to prevent back-pressure. PVB's are designed to operate under constant pressure on the supply side, not designed to prevent backpressure, and must be installed a minimum of twelve inches (12") above the highest outlet.

4. ***Reduced Pressure Assembly*** **(RPA)** is an approved assembly with two independently operating check valves, with a hydraulic automatic operating differential relief valve between the two checks. The assembly has two shut-off valves to isolate the assembly. This assembly prevents backpressure and is an anti-siphon device for high hazard use. RPA's may not be installed underground unless the vault has a drain to daylight (twice the diameter of the inlet pipe) at least twelve inches (12") below the RPA.

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References:

Colorado Revised Statutes (CRS) Section 25-1-114 and 25-1-114.1.

Colorado Primary Drinking Water Regulations (CPDWR), Regulation 11.39 Backflow Prevention and Cross-Connection Control Rule.

Cross-Connection Control Manual, Colorado Department of Public Health and Environment (latest edition).

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