CITY OF PORT ARTHUR UTILITY OPERATIONS-REGULATORY DIVISION

CROSS-CONNECTION CONTROL PROGRAM

EFFECTIVE MAY 15, 2018

CROSS-CONNECTION CONTROL PROGRAM

- INTRODUCTION

  As the public water provider, the City of Port Arthur must follow requirements of the Texas Commission on Environmental Quality (TCEQ) and administer a cross-connection control program [30 Texas Administrative Code (TAC) 290.44(h)]. This program helps to protect the public water supply and ensure that every citizen in the city of Port Arthur continue to enjoy safe drinking water. While the city of Port Arthur possessed such a program for several years, the city is implementing new measures to strengthen our compliance with state requirements so that actual or potential connections between the drinking water supply and possible sources of contamination or pollution are separated.

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- INTRODUCTION, Cont'd.

  Backflow into a public water system can pollute or contaminate the water in that system, making it unsafe to drink. Each water provider has a responsibility to supply water that is usable and safe to drink under all foreseeable circumstances. Furthermore, consumers have faith that water delivered to them through a public water system is safe to drink. Therefore, the City of Port Arthur must take precautions to protect its public water system against backflow.

  The backflow assembly is part of our requirement that controls cross-connections and prevents the possibility of backflow. In order to insure that backflow assemblies are working properly, it must be certified upon installation and tested periodically thereafter as required by state and municipal code. Facilities required by the City of Port Arthur to install backflow devices must provide documentation annually to the City of Port Arthur Regulatory Services Division demonstrating that this testing has been completed. This information is provided in the format designated by the City of Port Arthur. The type of backflow prevention assembly the city will require shall be determined by the specific potential hazard identified in 30 TAC §290.47(i).

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- CROSS-CONNECTION

  A cross-connection is any temporary or permanent connection between a public water system or consumer's potable (i.e., drinking) water system and a source or system containing non-potable water or other substances. An example is the piping between a public water system or consumer's potable water system and an auxiliary water system, cooling system, or irrigation system.

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- BACKFLOW

  Backflow is the reversal of the flow of water or other substances through a cross-connection into the public water system or consumer's potable water system. There are two types of backflow: backpressure backflow and back-siphonage.

  - backpressure backflow

  Backpressure backflow is backflow caused by a downstream pressure that is greater than the upstream or supply pressure in a public water system or consumer's potable water system. Backpressure can result from an increase in downstream pressure, a reduction in the potable water supply pressure, or a combination of both. Increases in downstream pressure can be created by pumps, temperature increases in boilers, differences in height, etc.

  - back-siphonage

  Back-siphonage is backflow caused by a negative pressure (i.e., a vacuum or partial vacuum) in a public water system or consumer's potable water system. The effect is similar to drinking water through a straw. Some causes of negative pressure in a public water line are water line flushing, firefighting, or breaks in water mains.

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- TYPES OF BACKFLOW PREVENTERS

  A backflow preventer is a means or assembly which prevents pollutants and contaminants from flowing into the public water system.

  - Air gap

  An air gap is a vertical, physical separation between the end of a water supply outlet and the flood-level rim of a receiving vessel. This separation must be at least twice the diameter of the water supply outlet and never less than one inch.

  An air gap is considered the maximum protection available against backpressure backflow or back-siphonage, but is not always practical and can easily be bypassed.

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- TYPES OF BACKFLOW PREVENTERS, Cont'd.
  - Reduced pressure zone assembly

A reduced pressure zone assembly protects water from substances that may contaminate water causing illness or death. These may be used for high hazard or low hazard requirements.

A sprinkler/irrigation system that has a chemical feed requires this assembly. It is also commonly used in commercial establishments to protect against numerous contaminants. These assemblies must be installed above ground.

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- TYPES OF BACKFLOW PREVENTERS, Cont'd.

  Pressure vacuum breaker

  A pressure vacuum breaker (PVB) is a type of backflow prevention device, used to keep non-potable (or contaminated) water from entering the water supply. A PVB is similar to an atmospheric vacuum breaker (AVB), except that the PVB contains a spring-loaded poppet. This makes it acceptable for applications that are high hazard or where valves are downstream.

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- TYPES OF BACKFLOW PREVENTERS, Cont'd.

  Double-check valve assembly

  A double-check valve assembly protects water from substances that may pollute but not contaminate the water. These are used for low-hazard requirements.

  For instance, sprinkler/irrigation systems are required to be protected by these assemblies. They are normally installed near the meter in an underground box.

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- TYPES OF BACKFLOW PREVENTERS, Cont'd.
  - Hose Bibb vacuum breaker

A hose bibb vacuum breaker (HBVB) is one of the least expensive and most commonly used backflow preventers. When attached to an outside water tap, these backflow preventers keep water that may be contaminated with fertilizer or insecticide from entering your drinking water.

City Ordinance requires you to attach an HBVB if you have a sprayer on your hose.

- Soft drink dispensing machine require backflow protection

Soft drink dispensers (post-mix carbonators) use carbonated water mixed under pressure with syrup and water to provide soft drinks beverages. Many, if not most water pipes are made of copper. When carbonated water comes into contact with copper, it chemically dissolves the copper from the pipe. This copper-carbonate solution has been proven to be a risk to the digestive system.

CONTACT INFORMATION

If you have any questions or would like additional information, please feel free to contact us.

Regulatory Services Division/Backflow/Cross Connection Control, 444 4th Street, Port Arthur, Texas 77640 (409)-983-8290 or (409) 983-8288.