

CROSS-CONNECTION
CONTROL PROGRAM

HARVEST-MONROVIA WATER, SEWER
AND FIRE PROTECTION AUTHORITY

Adopted February 8, 1988
Revised September 19, 1995
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Approved

Witness

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INTRODUCTION

Harvest-Monrovia Water, Sewer and Fire Protection Authority, in its operations of a potable water system, is required to ensure protection of public health through the provision of minimum requirements and standards for design, construction, operation, and maintenance of its system. It is essential that physical cross connections, which create or have potential to create an imminent and substantial danger to public health, be eliminated from the distribution system and plumbing system of customers. Backflow can result in potable water systems becoming a transmitter of disease, toxic materials, and other hazardous liquids. Therefore, it is necessary to establish and maintain a Cross Connection Control Program to protect the health of water customers by the control of actual and/or potential cross connection through methods of containment and/or isolation.

AUTHORITY

In accordance with the Public Law 805, and 22-23-30 Code of Alabama 1975, and Safe Drinking Water Act of 1997 as amended, and SBCCI standard codes 1985 edition and revised procedures adopted the 4th day of January 1988.

The Alabama Department of Environmental Management requires public water supply systems to establish a routine Cross Connection Control Program for the purpose of detecting and preventing cross connections that create or have the potential to create an imminent and substantial danger to public health by and from contamination due to the cross connection. Upon detection of a prohibited cross connection, both community and non-community water systems shall either eliminate the cross connection by installation of an appropriate backflow prevention device acceptable to the Authority or discontinue service until the contaminant source is eliminated. Such program shall be developed utilizing accepted practices of the American Water Works Association guidelines as set forth in AWWA manuals M14, "Backflow Prevention and Cross Connection Control" and "Cross Connections and Backflow Prevention, 2nd Edition".

RESOLUTION

Resolution For The Control of Backflow and Cross Connections

Whereas, the Harvest-Monrovia Water, Sewer and Fire Protection Authority operates a water supply system which serves the Harvest and Monrovia communities and certain surrounding areas;

Whereas, it is recognized that cross connections allowing non-potable water or other foreign substances to contaminate the drinking water supply present an imminent health hazard to both residential and non-residential users of the public water system and the threat of significant economical loss due to disrupted water service to commercial, industrial and institutional water users and the possibility of liabilities that may be incurred;

Whereas, the cost of restoring the public water supply after contamination presents the possibility of a substantial financial liability; now therefore,

Be it ordained by the Harvest-Monrovia Water, Sewer and Fire Protection Authority that the following be adopted.

Section 1. Cross Connections Prohibited

1.1 No person shall install, cause to be installed, or maintain a cross connection between any system of piping supplied by water from the potable water supply of the Authority and any other sources, or piping or equipment containing water or other substances of unknown or questionable quality that may degrade the quality or present a health or system hazard to the potable water supply intended for human consumption unless such connection has been controlled to the satisfaction of the Authority.

1.2 No person shall install or maintain a water service connection to any premises where cross connections to the consumers water system may exist unless such actual or potential cross connections are eliminated or controlled.

1.3 A cross connection device shall be installed with every new service connection. The Authority reserves the right to require each customer to pay for cross connection controls to the premises.

Section 2. Authority

2.1 The Authority shall be responsible for establishing a program of cross-connection control that will adequately protect the water supply by isolating at the service connection such contaminants or pollutants within the consumer's water system that may backflow through cross-connections into the public water supply.

2.2 The Authority shall require the installation of a cross-connection device at the service connection of all residences and facilities. The Authority shall have the authority to require such device to be installed at the owners expense if deemed necessary by the Authority. It is the responsibility of the owner to maintain the backflow device.

2.3 A failure or refusal on the part of the customer to properly maintain the required device shall be grounds for immediate disconnection of water service to the premises until such time all corrections have been made. A \$500 fine shall be levied against all violators.

2.4 The Authority shall formulate a written policy or manual and provide such cross-connection control information as needed to assist customers with carrying out the provisions of this resolution.

The foregoing was first read at the meeting of the Harvest-Monrovia Water, Sewer and Fire Protection Authority on the 8th day of February 1988 and adopted.

Revised on this 19th day of September, 1995
Revised on this 8th day of February 2005

Attest

Approved (General Manager)

RESPONSIBILITY

(a) The Authority is responsible for the protection of its potable water distribution system from backflow of contaminants or pollutants through any water service connection. The Authority requires an approved backflow prevention device at all water service connections. The Authority, at time of installation, will install the proper device at the owners expense.

(b) It is the customer's responsibility to insure that the backflow prevention device is in place at all times and that the device shall not be tampered with or removed for any reason. No connections shall be made to the water system without a backflow device. This will constitute grounds for immediate disconnection of water service until such device is replaced or installed. The customer is responsible for all charges incurred in the replacement or installation of the device. A \$500 fine will be levied against all violators.

(c) Compliance testing after initial installation of a backflow prevention device shall be performed by the Authority.

(d) In the event of any known or suspected accidental pollution or contamination of the consumer's or the Authority's potable water, the consumer shall promptly take steps to confine any further spread of pollution or contamination and shall immediately notify the Authority of the situation.

POLICY

(a) All premises having an auxiliary water supply which is not or may not be of safe bacteriological or chemical quality and which is not acceptable as an additional source to the Authority shall not be connected to the potable water supply by any means. If such source is found connected, the customer will be immediately disconnected until the problem is corrected. A \$500 fine will be levied and paid before water service is restored.

(b) For all premises where there is water or substances that could be objectionable but not hazardous to health, if introduced into the public water system, the public water system shall be protected by an approved air gap separation, or an approved double check valve assembly, or an approved vacuum breaker.

(c) For all premises where there is any material dangerous to health, which is handled in such a fashion as to create an actual or potential hazard to the public water system, the public water system shall be protected by an approved reduced pressure principle backflow prevention device. Examples of premises where these conditions have been found to exist include sewage treatment plants, sewage pumping stations, chemical manufacturing plants, hospitals, mortuaries, and plating plants.

(d) For all premises where there are “uncontrolled” cross connections, either actual or potential, the public water system shall be protected by an approved air gap separation or an approved reduced pressure principle backflow prevention device.

(e) For all premises where security requirements or other prohibitions or restrictions make it impossible or impractical to perform a complete in-plant cross-connections survey, the public water system shall be protected by an approved air gap separation or an approved reduced pressure principle backflow prevention device.

(f) For all premises more than two stories high (excluding basements), the public water system shall be protected by an approved double check valve assembly.

(g) All backflow prevention devices shall be installed at a location designated by the Authority. Generally this will be immediately in the customer’s side of the meter.

(h) The following types of facilities shall normally require the designated backflow prevention devices. This list is presented as a guideline and should not be construed as being final or complete. Each case will be judged on its own merit.

FACILITIES REQUIRING BACKFLOW PREVENTION DEVICES

A.G. – Air Gap Separation

D.C. – Double Check Valve Assembly

R.P. – Reduced Pressure Principle
Backflow Prevention Device

V.B. – Vacuum Breaker (type to be designated)

Type of Facility

Type of Protection

Ice Cream & Dairy Products

A.G. or D.C.

Car Wash

A.G. or R.P.

Chemical Plant

A.G. or R.P.

Film Lab or Development

A.G. or R.P.

Food or Beverage Processing Plant

D.C.

Hospitals, Clinics, & Medical Buildings

A.G. or R.P.

Laboratories

A.G. or R.P.

Laundries or Dry Cleaners

D.C.

Machine Tool Plants (health hazard)

A.G. or R.P.

Machine Tool Plants (no health hazard)

D.C.

Metal Plating Plants

A.G. or R.P.

Morgues, Mortuaries or Autopsy Facilities

A.G. or R.P.

Multistoried Buildings

A.G. or D.C.

Packing Houses

A.G. or R.P.

Paper Product Plants

A.G. or R.P.

Pesticides & Herbicides Exterminators	A.G. or R.P.
Petroleum Processing Plants	A.G. or R.P.
Petroleum Storage Plant or Yard (health hazard)	A.G. or R.P.
Petroleum Storage Plant or Yard (no health hazard)	D.C.
Pharmaceutical or Cosmetic Plants	A.G. or R.P.
Piers, Docks or Water Front Facilities	A.G. or R.P.
Power Plants	A.G. or R.P.
Radioactive Material Plants	A.G. or R.P.
Sand & Gravel Plants	D.C.
Schools with Laboratories	D.C.
Irrigation Systems	D.C.
Irrigation Systems (with chemical feed)	A.G. or R.P.
Swimming Pools	A.G. or R.P.
Sewage Treatment Plants	A.G. or R.P.
Sewage Pumping Stations (health hazard)	A.G. or R.P.
Sewage Pumping Stations (no health hazard)	D.C.
Sewage Pumping Stations (outside hose bibs only)	V.B.
Premises having water re-circulating systems & pumps (health hazard)	A.G. or R.P.
Premises having water re-circulating systems & pumps (no health hazard)	R.P. or D.C.
Premises having boiler, cooling systems, or hot water heating systems where chemical water conditioners are used	A.G. or R.P.
Premises having storage tanks, reservoirs, ponds, etc.	A.G. or R.P.
Veterinary Establishments	A.G. or R.P.

INSPECTION

(a) The Authority shall conduct inspections of customer's premises where suspected cross-connections or potential cross-connections may exist. Customers shall be notified in advance of the inspections and the reason for the inspections. Should any cross-connections or potential cross-connections be detected, the customer shall be notified in writing of the appropriate type of backflow prevention device to be installed. Refusal by a customer to allow an inspection shall be considered prima facie evidence of the existence of cross-connections, thereby requiring the installation of an approved reduced pressure principle backflow prevention device. The water service shall be disconnected and a \$500 fine levied. The cross-connection will be eliminated and the fine paid before service is restored.

(b) All new services shall be classified at the time of application to indicate the degree of hazard anticipated and hence, the type of device required. Any later change in water usage may require a change in the type of device.

(c) All water customers of the Authority shall be required to notify the Authority in writing, of any changes in their water usage. These changes will be evaluated to determine if there is an increase in the potential health hazard and if such increase requires a different device.

RECORDS

Appropriate records shall be maintained by the Authority of all potential and confirmed cross-connections. Installations and tests of backflow prevention devices shall be recorded and filed for future reference.

MAINTENANCE

(a) Routine testing of backflow prevention device(s) shall be performed by the Authority. The frequency of testing will be dependent upon the type of device installed and the potential health hazard involved.

(b) Customers will be notified in advance of the date and approximate time any testing will be performed. It will be necessary to shut off the water service for a period of time. Every effort will be made to schedule tests to suit the customer's convenience. If the customer's operations cannot permit any interruption of service, it will be the customer's responsibility to have two approved backflow prevention devices installed in parallel so that one may be used while the other is being tested. Bypasses around backflow prevention devices are expressly forbidden. If a bypass is detected the water service will be disconnected immediately and a \$500 fine levied. The problem will be corrected before service is restored.

(c) If any devices are found to be faulty, the customer will immediately be notified and will be required to have the device promptly repaired or replaced. In high hazard situations, it may be necessary to terminate service until a properly operating device is in place. The customer may be required to pay for this corrective action.

DEFINITIONS

Air Gap Separation – An unobstructed vertical distance through which the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other device and the flood rim of the receptacle, and shall be at least double the diameter of the supply pipe measured vertically above the flood level rim of the vessel. In no case shall the gap be less than one (1) inch. This gap shall also be above the established 100-year flood level.

Atmospheric Vacuum Breaker – A backflow prevention device which is operated by atmospheric pressure in combination with the force of gravity. The unit is designed to work in a vertical plane only. The moving part consists of a poppet valve, which must be carefully sized to slide in a guided chamber and effectively shut-off the reverse flow of water when a negative pressure exists.

Auxiliary Water Supply – Any water supply on or available to the premises other than the purveyor’s approved public potable water supply. These auxiliary water supplies may include water from another purveyor’s public water supply or any natural source(s) such as a well, spring, river, stream, harbor, etc., or “used waters” or “industrial fluids”. These waters may be polluted, contaminated, or may be objectionable and constitute an unacceptable water source over which the water purveyor does not have sanitary control.

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

Back Pressure – Backflow caused by a pump, elevated tank, boiler, or other means that could create pressure greater than the supply pressure.

Back Siphonage – Backflow due to a negative or subatmospheric pressure within a water system.

Backflow Prevention Device – A device to counteract back pressure or prevent back siphonage.

Backflow Prevention Device – Approved – The term approved backflow prevention device shall mean a device that has met the requirements of one or more of the following standards:

AWWA – C-505	Standard for backflow prevention devices, Reduced Pressure principle and Double Check Valve types.
ASSE – 1001	Atmospheric type vacuum breakers.
ASSE – 1011	Hose connection vacuum breakers.
ASSE – 1020	Pressure type vacuum breakers.
ASSE – 1024	Dual Check Type backflow preventer. (Residential use only.)
ASSE – 1013	Reduced pressure principle back pressure backflow preventers.
ASSE – 1015	Double check valve type back pressure Backflow preventers.
USC-FCCC	University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.

Containment – A method of controlling potential and/or confirmed cross-connections by installation of a double check assembly or a reduced pressure principle backflow prevention device.

Cross-Connection – Any physical arrangement whereby a public water supply system is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture, or other device which contains or may contain contaminated water, sewage, or other waste or liquid of unknown or unsafe quality, which may be capable of imparting contamination to the public water supply system as a result of backflow. Bypass arrangements, jumper connections, removable sections, swivel or change-over devices, or any other temporary or permanent devices through which or because of which backflow could occur are considered to be cross-connections.

Double Check Valve Assembly – An assembly composed of two single, independently acting check valves, including tightly closing shutoff valves located at each end of the assembly and suitable connections for testing the water tightness of each check valve.

Health Hazard – Any conditions, devices, or practices in any water supply system or in its operation which create or may create a danger to the health and well-being of the water consumer.

Isolation – A method of controlling potential and/or confirmed cross-connections by installation of an air gap separation or a vacuum breaker.

Pressure Vacuum Breaker – A pressure vacuum breaker is similar to an atmospheric vacuum breaker except that the checking unit “poppet valve” is activated by a spring. This type of vacuum breaker does not require a negative pressure to react and can be used on the pressure side of a valve.

Public Water Supply – Any system or water supply intended or used for human consumption or other domestic use, including source, treatment, storage, and distribution where water is furnished to any community, collection or number of individuals, or is made available to the public for human consumption or domestic use, but excluding supplies serving one single-family residence.

Reduced Pressure Principle Backflow Prevention Device – A device incorporating two or more check valves and an automatically operating differential relief valve located between the two check valves, two shutoff valves and equipped with necessary appurtenances for testing. The device shall operate to maintain the pressure in the zone between the two check valves, less than the pressure of the public water supply side of the device even at cessation of normal flow. In the case of leakage of either check valve, the differential relief valve shall operate to maintain this reduced pressure by discharging to the atmosphere. When the inlet pressure is two pounds per square inch or less, the relief valve shall open to the atmosphere, thereby providing an air gap in the device. This air gap shall also be above the 100-year flood level.

APPENDIX A

APPENDIX B

