

CHAPTER 53: WATER QUALITY PROTECTION

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§ 53.01 DEFINITIONS.

For the purpose of this chapter, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

AIR-GAP SEPARATION. An unobstructed vertical distance through the atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other device and the flood level rim of the receptacle. An approved air-gap vertical separation shall be at least double the diameter of the supply pipe. In no case shall the air-gap be less than 1 inch.

APPROVED. Certified in writing by the (Person in Responsible Charge) as an acceptable device or methodology for the purpose of back-flow prevention.

AUXILIARY INTAKE. Any piping connection or other device whereby water may be secured from a source other than public water supply.

BACKFLOW. Any flow of water into the public water supply from any other source due to a cross-connection, auxiliary intake, interconnection, backpressure, backsiphonage, any combination thereof, or other cause.

BACKFLOW PREVENTION DEVICE. An approved effective device method used to prevent backflow from occurring in the potable water supply. The type of device required shall be based on degree of hazard, existing or potential.

BACKPRESSURE. Any pressure on any source of water other than the public water supply that may be greater than the pressure on the public water supply and may result in a backflow.

BACK SIFIIONAGE. Any circumstance in which the pressure on the public water supply may be reduced to the point that the elevation and atmospheric pressure on a source of water other than the public water supply may result in a pressure to be greater than the pressure on the public water supply and may result in a back flow.

CERTIFIED TESTER. A person who has proven his or her competency to test, repair, overhaul and make reports on backflow prevention devices as evidenced by certification of successful completion of a training program approved by the (Person in Responsible Charge).

CONFINEMENT DEVICE. A backflow prevention device, as approved and required, installed within a private plumbing or distribution system to isolate a localized hazard from the remainder of said system.

CONSUMER. Any person, firm, or corporation responsible for any property at which water from the (county, city, and the like) public water supply is received. In the absence of other parties or the failure of other parties to accept the responsibilities herein set forth, the owner of record shall be ultimately responsible. A backflow prevention device, as approved, installed at the point of separation between the public water supply and a private service or private distribution system or at the point of metering.

CONTAINMENT DEVICE. A backflow prevention device, as approved and required, installed at the point of separation between the public water supply and a private service or private distribution system or at the point of metering.

CONTAMINATION. The presence of any foreign substance (organic, inorganic, radiological, or biological) in water that tends to degrade its quality as to constitute a hazard or impair the usefulness of the water.

CROSS-CONNECTION. Any physical connection whereby the public water supply is connected with any other water supply system, whether public or private, either inside or outside of any building or buildings, in such a manner that a flow of water into the public water supply is possible either through the manipulation of valves or because of ineffective check or back-pressure valves, or because of any other arrangement.

CROSS-CONNECTION CONTROL COORDINATOR. The official position established and authorized by the (county, city, and the like) designated by the (Person in Responsible Charge) to administer, interpret this section and who shall be a certified tester.

DOUBLE CHECK VALVE BACKFLOW PREVENTION DEVICE. An approved assembly composed of 2 single, spring-loaded independently operating check valves, including tightly closing shut-off valves located at each end of the assembly and having suitable connections for testing the water tightness of each check valve.

DUAL CHECK VALVE. An approved device containing 2 independently acting check valves in series.

FIRE LINE. A system of pipes and equipment used to supply water in an emergency for extinguishing fire.

INTERCONNECTION. Any system of piping or other arrangement whereby the public water supply is connected directly with a sewer, drain, conduit, pool, heat exchanger, storage reservoir, or other device which does or may contain sewage or other waste or substance which would be capable of imparting contamination to the public water supply.

PRESSURE VACUUM BREAKER. An approved assembly containing an independently operating spring loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve. The assembly must be equipped with suitable connections for testing the proper operation of the device and tightly closing shut-off valves located at each end of the assembly.

PUBLIC WATER SUPPLY. The water and waterworks system of the (county, city, and the like) and its customers outside the (county, city, and the like) limits, for general use and which supply is recognized as the public water supply by the North Carolina Department of Environmental Health and Natural Resources.

REDUCED PRESSURE ZONE PRINCIPLE BACKFLOW PREVENTION DEVICE (RPZ). An approved device containing within its structure 2 spring loaded independently operating check valves, together with an automatically operating pressure differential relief valve located between the two check valves. The first check valve reduces the supply pressure a predetermined amount so that during normal flow and at cessation of normal flow the pressure between the checks shall be less than the supply pressures. 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 check valves less than the supply pressure. This device shall have suitable connections for testing the proper operation of the device, including tightly closing shut-off valves located at each end of the device.

(Ord. passed 6-8-1987)

§ 53.02 COMPLIANCE WITH FEDERAL AND STATE LAW.

The town will comply with the Federal Safe Drinking Water Act, the North Carolina Drinking Water Act, and North Carolina State Building Code, which pertain to cross-connections, auxiliary intakes and interconnections, and establish an effective ongoing program to control potential sources of contamination of the public water supply.

(Ord. passed 6-8-1987)

§ 53.03 UNLAWFUL CONNECTIONS.

It shall be unlawful for any person to cause a cross-connection, auxiliary intake or interconnection to be made or allow one to exist for any purpose whatsoever.

(Ord. passed 6-8-1987) Penalty, see § 53.99

§ 53.04 INSPECTION OF PROPERTY.

It shall be the duty, upon request of the (Person in Responsible Charge), of the cross connection coordinator to cause inspections to be made of properties served by the public water supply where cross-connections with the public water supply are deemed possible. The frequency of inspections and reinspections shall be set by the (Operator in Responsible Charge).

(Ord. passed 6-8-1987)

§ 53.05 RIGHT OF ACCESS.

The (Person in Responsible Charge), or authorized representative, shall have the right to enter, at reasonable time, any nonresidential property served by a connection to the (county, city, and the like) public water supply for the purpose of performing the duties of this chapter. In those cases in which the property owner chooses not to provide such access, the (Person in Responsible Charge), or authorized representative, may designate the location as a high hazard in accordance with § 53.07.

(Ord. passed 6-8-1987)

§ 53.06 EXISTING CONDITIONS.

Any consumer shall be allowed 90 days to correct any cross-connections, auxiliary intakes, interconnections or other hazard as defined by § 53.07 in violation of the provisions of this chapter. The 90 days will be from the date of receipt of the notification given by the Cross Connection Coordinator.

(Ord. passed 6-8-1987)

§ 53.07 HAZARDOUS USES.

- (A) The following uses shall be classified as hazardous uses:
- (1) Hazardous uses include, but are not limited to: pumps and tanks handling sewage, radioactive, lethal, or toxic substances, boiler and steam connections, sewer waste lines, low inlets to receptacles containing toxic substances, coils or jackets used as heat exchangers, flush valve toilets without vacuum breaks, bacteria and viral materials, private wells or other private water supply irrigation systems, water systems or hose connections, with booster pumps, carbonation equipment, or similar hazard potential as determined by the Cross Connection Coordinator;
 - (2) Any location at which the nature or mode of operations within a premises are such that frequent alterations are made to the plumbing or at which there is a likelihood in the determination of the Cross Connection Coordinator that protective measures may be subverted, altered, or disconnected;
 - (3) Any facility which contains, but is not limited to, a bottling plant, cannery, building having 5 or more stories, battery manufacturer, exterminator, greenhouse, chemical processing plant, dairy, dye works, film laboratory, car wash, hospital, commercial laboratory, laundry, metal fabricating operations, mortuary, swimming pool, morgue, x-ray equipment, medical office with laboratory, aspirator, medical washing equipment, packing house, plating plant, poultry house, power plant, nuclear reactor, those fire sprinkler systems equipped with facilities for introduction of freeze preventive chemicals or other substances other than water, dental office, any radioactive material, restaurant, shopping mall with tenant conducting any activity listed in this section and sewage pump or treatment facilities.
- (B) All installations described in this section shall be deemed hazardous uses and must have a containment device in the form of a reduced pressure zone backflow prevention device, provided that, if the consumer demonstrates to the satisfaction of the Cross Connection Coordinator that sufficient internal confinement devices have been installed and tested. The Cross Connection Coordinator may require that the consumer provide engineering drawings sealed by a professional engineer of installations within the premises, which provide complete internal protection against cross-connection as approved by the Cross Connection Coordinator. Any such connection shall be considered an other connection for determining the type of containment device required. Each internal confinement device shall be 1 of the following, as approved by the (Person in Responsible Charge) or his authorized representative: reduced pressure zone principle backflow prevention device, double check valve backflow prevention device, air gap, vacuum break-pressure type, or dual check valve. Each reduced pressure zone principal backflow prevention device serving as an internal confinement device shall have a mesh strainer immediately upstream of the inlet gate valve.

- (C) No person shall fill any tanks or tankers which include the following: those containing pesticides, fertilizers, other toxic chemicals or residues, flush trucks, street sweepers, and nonpotable water tankers from a public water system except with an approved air gap fill or an approved reduced pressure backflow preventor properly installed on the tank or tanker or on the public water supply fill pipeline or hose.

(Ord. passed 6-8-1987)

§ 53.08 OTHER CONNECTIONS.

- (A) Services to single-family residential units, not otherwise required by this code to have other containment devices, may have a containment device in the form of an approved dual check valve on all such services which meters are applied more than 90 days following the date of adoption of this chapter, the dual check valves or other containment devices as required shall be installed by the owner's representative prior to the installation of the meter by the (Department of Public Utilities). On all such services for which meters have been applied prior to that date, the dual check valve shall be installed by the (Department of Public Utilities), provided that the (County, City, etc.) reserves the right to charge the owner or occupant of any residence for the cost of said device and its installation. Maintenance of dual check valve containment devices installed in accordance with this section shall be conducted by the (Department of Public Utilities). Testable containment devices that are required on lawn irrigation water systems and must be tested every 3 years by a contractor that has been approved by the (County, City, etc.)
- (B) All other connections to the public water supply of the (County, City, etc.) shall have containment devices in the form of a double check valve backflow prevention device as set forth in this section. This shall include water mains installed to (County, City, etc.) standard, and with (County, City, etc.) supervision, but which are not maintained by the (County, City, etc.), including but not limited to manufactured home parks, apartments, group housing projects, and other private distribution systems, or similar hazard potential as determined by the (Person in Responsible Charge), or his authorized representative. Private distribution systems shall be configured so as to provide looped mains, with 2 or more containment devices on each building water service connection and at dead-end branch mains.

(Ord. passed 6-8-1987)

§ 53.09 INSTALLATION OF CONTAINMENT DEVICES.

- (A) The containment devices shall be located off street right-of-way on the water main side of any plumbing connections. When installed in a building, the device shall be located on the service line immediately after its entrance into the building. Each containment and confinement device shall be installed in a location that is physically accessible for inspection and testing as determined by the cross-connection coordinator. Containment devices, which have been buried in the ground, do not satisfy the provisions of this code. Each reduced pressure principle zone device shall

be installed such that flooding of the device is unlikely as determined by the Cross Connection Coordinator.

- (B) The (Person in Responsible Charge) shall maintain a list of approved manufacturers and models of hazard containment devices and drawings of standard installation, copies to be made available through the Office of the Director of Public Utilities and the Chief Inspector's office. All reduced pressure zone principle backflow prevention devices and double check valve backflow prevention devices shall be approved by the Foundation for Cross Connection Control and Hydraulic Research. All vacuum breaks and dual check valve devices shall be approved by the American Society for Sanitary Engineers. All installations and materials shall conform to (County, City, etc.) standards as set by the (Person in Responsible Charge).
- (C) In those cases in which containment and/or confinement devices have been previously installed by prior owners, the (County, City, etc.), or other parties, the responsibility for maintenance, testing, and replacement as applicable shall be with the consumer.
- (D) The cost of said means of containment, and any other plumbing modifications necessary and convenient thereto, and the testing and maintenance thereof is to be paid for by the consumer.

(Ord. passed 6-8-1987)

§ 53.10 NEW CONSTRUCTION.

All buildings proposing to connect to the public water system of the (County, City, etc.) receiving building permits, on or after the effective date of the ordinance set forth in this chapter, shall be equipped with an approved and tested as properly functioning backflow prevention device(s), as prescribed herein, prior to the issuance of a certificate of code compliance for that building. If a building permit was issued for the building prior to the effective date of this chapter or a building permit was not required, the building shall be considered to be an existing building prior to the effective date, in accordance with § 53.04.

(Ord. passed 6-8-1987)

§ 53.11 NOTIFICATION OF CONSUMER.

- (A) Upon identification of a hazard, or hazard potential, as defined in § 53.07 through § 53.08, the Cross Connection Coordinator shall notify the consumer, of record, of the property on which the hazard exists of the following:
 - (1) Location of hazard;
 - (2) Nature of hazard observed;
 - (3) Date hazard observed;

- (4) Section of code applicable;
- (5) Requirements of code.

(B) Such notification to be made by certified mail, with return receipt requested.
(Ord. passed 6-8-1987)

§ 53.12 CHANGE IN NATURE OF USE.

The (Person in Responsible Charge) shall be notified by the consumer the nature of use of the property changes so as to change the hazard classification of that property, as set forth in § 53.07 and § 53.08.

(Ord. passed 6-8-1987)

§ 53.13 CONSUMER RESPONSIBILITIES.

- (A) The consumer shall, upon notification, as defined in § 53.11, install the hazard containment device(s) as required within 90 days from the date of notification.
- (B) If, after expiration of 90 days, the containment device(s) has not been installed in conformance with standards set by the (Person in Responsible Charge), in a proper working condition, the (Person in Responsible Charge) may discontinue the public water supply service at that premises, and service shall not be restored until such devices have been installed. The (Person in Responsible Charge) may permit an extension of up to 90 additional days if compliance efforts are underway and the existence of hardship can be demonstrated.
- (C) The (County, City, etc.) shall bear no liability for direct or consequential damages proximately caused by the discontinuance of service pursuant to this section.

(Ord. passed 6-8-1987)

§ 53.14 TESTING AND MAINTENANCE OF DEVICES.

The consumer at each property at which containment and/or confinement device(s) have been installed, except those with devices installed in accordance with § 53.08(A) of this code, shall have each containment and/or confinement device(s) tested on an annual basis, and perform any routine maintenance to such device as recommended by the manufacturer and provide the Cross Connection Coordinator with a report of that inspection and work. The consumer shall cause such maintenance or repairs to be made rendering the device fully operational. Failure of the consumer to perform that testing and maintenance shall be cause for the premises to be deemed an immediate public health hazard. The (Person in Responsible Charge) may immediately thereafter discontinue public water supply service to that premises and service shall not be restored until such devices have been rendered operational. Where the use of water is critical to the continuance of normal operations or protection of life, property, or equipment, duplicated containment or confinement devices shall be provided by the property owner to avoid the necessity of discontinuing water

service to test or repair the device or devices.
(Ord. passed 6-8-1987)

§ 53.15 LIMITATION OF LIABILITY.

The (County, City, etc.) shall not be held liable, for any cause, for failure to detect any unit failing to operate adequately, or failure to identify any specific hazard, which may result in contamination of its public water supply, nor shall this chapter diminish the responsibility of any property owner from whose property a contamination of the public water supply may originate.
(Ord. passed 6-8-1987)

§ 53.99 PENALTY.

- (A) *Penalty.* Violation of any provision of this chapter may subject the offender to a civil penalty to be recovered by the (County, City, etc.) in a civil action in the nature of debt if the offender does not pay the penalty within 30 days after the assessment has become final by exhaustion of the appeal process established by this section, or by failure to appeal the assessment. The civil penalty for violation of any provision of this cross connection control chapter shall not exceed \$500 per day for each day of continuous violation, or a cumulative or single civil penalty of \$10,000. The civil penalty for willful violation of any provision of this chapter shall not exceed \$1,000 per day for each day of a continuous violation, or a cumulative or single civil penalty of \$20,000.
- (B) *Assessment.* Any civil penalty shall be assessed by the (Manager), upon the recommendation of the (Person in Responsible Charge), and shall be based upon the reasonable estimated cost of correcting the cited violation, the magnitude of the potential risk posed to the public health, safety and welfare by the violation, and the cost of the public safety or other emergency response caused by the violation. The (Manager) shall serve written notice of the civil penalty assessment on the offender and set out with reasonable care the basis of the amount so assessed.
- (C) *Equitable relief.* An appropriate equitable remedy, including a mandatory or prohibitory injunction, issuing from a court of competent jurisdiction, may endorse the provisions of this chapter.
- (D) *Enforcement option.* The penalties and enforcement provisions established by this chapter may be applied in addition to or instead of the penalties established by other sections of this code.

(Ord. passed 6-8-1987)