

# Tuckaseegee

## Water & Sewer Authority

### Cross Connection Ordinance

**TUCKASEIGEE WATER & SEWER AUTHORITY  
CROSS CONNECTION POLICY**

**Article I. INTRODUCTION.....Pg. 3**

**Article II. OBJECTIVES OF ORDINANCE.....Pg. 3**

**Article III. RESPONSIBILITIES.....Pg. 4**

**Article IV. DEFINITIONS.....Pg. 7**

**Article V. RIGHT OF ENTRY.....Pg. 18**

**Article VI. ELIMINATION OF CROSS CONNECTIONS.....Pg. 18**

**Article VII. INSTALLATION OF ASSEMBLIES.....Pg. 20**

**Article VIII. TESTING AND REPAIR OF ASSEMBLIES.....Pg. 22**

**Article IX. FACILITIES REQUIRING PROTECTION.....Pg. 23**

**Article X. CONNECTIONS WITH UNAPPROVED  
SOURCES OF SUPPLY.....Pg. 27**

**Article XI. ENFORCEMENT.....Pg. 27**

**Article XII. ADOPTION.....Pg. 30**

## **Article I. INTRODUCTION**

The purpose of this Cross Connection Control Ordinance is to define the authority of Tuckaseegee Water & Sewer Authority as the water purveyor in the elimination of all cross connections within its public potable water supply.

This Ordinance shall apply to all consumers connected to the Tuckaseegee Water & Sewer potable water supply.

This Ordinance will comply with the Federal Safe Drinking Water Act (P.L. 93-523), the North Carolina State Administrative Code (Title 15A, Subchapter 18C), and the North Carolina State Building Code, Plumbing Code; all in their most recent revisions, as they pertain to cross connections with the public water supply.

## **Article II. OBJECTIVES OF ORDINANCE**

The specific objectives of the Cross Connection Control Ordinance for the Tuckaseegee Water & Sewer Authority are as follows:

### **Section 2.01**

The intent of this Ordinance is to eliminate the potential hazards to the potable water within the Tuckaseegee Water and Sewer Authority's water main and water supply systems. It is the intent of this section to provide for the conveyance of potable water through the use of backflow prevention and cross connection control practices. It is also the intent to apply the principle that the degree of protection will be commensurate with the degree of hazard. Specific goals include;

- (a) To protect the public potable water supply available to the customers of Tuckaseegee Water & Sewer Authority against actual or potential contamination by isolating within the customer's water system, contaminants or pollutants which could, under adverse conditions, backflow through uncontrolled cross connections into the public water system.*
- (b) To eliminate or control existing cross connections, actual or potential, between the consumer's potable water system(s) and non-potable or industrial piping system(s).*
- (c) To provide a continuing inspection, testing and maintenance program of cross connection control which will systematically and effectively control all actual or potential cross connections that may be encountered in the future.*

## **Article III. RESPONSIBILITIES**

Health Agency, Water Purveyor, Plumbing Official, Consumer, Certified Backflow Prevention Assembly Tester.

### **Section 3.01      Responsibility: Health Agency**

The North Carolina Department of Environment, Health and Natural Resources, Division of Water Resources, Public Water Supply Section (NCDENR-DWR-PWS), or successor agency has the responsibility for promulgating and enforcing laws, rules, regulations, and policies to be followed in carrying out an effective Cross Connection Control Program.

NCDENR-DWR-PWS also has the primary responsibility of insuring that the water purveyor operates the public potable water system free of actual or potential sanitary hazards, including unprotected cross connections. It has the further responsibility of insuring that the water purveyor provides an approved water supply at the service connection to the consumer's water system and, further, that it requires the installation, testing, and maintenance of an approved backflow prevention assembly on the service connection.

### **Section 3.02      Responsibility: Water Purveyor**

Except as otherwise provided herein, the water purveyor's (Tuckasegee Water & Sewer Authority) responsibility to ensure a safe water supply begins at the source and includes all of the public water distribution system including the service connection, and ends at the point of delivery to the consumer's water system(s). In addition, the water purveyor shall exercise reasonable vigilance to insure that the consumer has taken the proper steps to protect the public potable water system. To insure that the proper precautions are taken, Tuckasegee Water & Sewer Authority is required to determine the degree of hazard or potential hazard to the public potable water system; to determine the degree of protection required; and to ensure proper containment protection through an on-going inspection program.

When it is determined that a backflow prevention assembly is required for the protection of the public system, Tuckasegee Water & Sewer Authority shall require the

consumer, at the consumer's expense, to install an approved backflow prevention assembly at each service connection. TWSA will also require the backflow device to be tested immediately upon installation and thereafter at a frequency as determined by Tuckasegee Water & Sewer Authority, to properly repair and maintain such assembly or assemblies and to keep adequate records of each test and subsequent maintenance and repair, including materials and/or replacement parts.

### **Section 3.03      Responsibility: Plumbing Inspections**

The Permitting and Code Enforcement Department of Jackson County, or successor agency, has the responsibility to review building plans and inspect plumbing as it is installed and it also has the explicit responsibility of preventing cross connections from being designed and built into the plumbing system within its jurisdiction. Where the review of building plans suggests or detects the potential for cross connections being made an integral part of the plumbing system, the plumbing inspector has the responsibility, under the North Carolina Building Code, for requiring that such cross connections be either eliminated or provided with code approved backflow prevention equipment.

The plumbing inspector's responsibility begins at the point of delivery (downstream of the first installed backflow prevention assembly) and continues throughout the entire length of the consumer's water system. The plan inspector should inquire about the intended use of water at any point where it is suspected that a cross connection might be made or where one is actually called for by the plans. When such is discovered it shall be mandatory that a suitable backflow prevention assembly approved by the North Carolina Building Code be required by the plans and be properly installed. The primary protection assembly for containment purposes only shall have approval from Tuckasegee Water & Sewer Authority, the Permitting and Code Enforcement Department of Jackson County, or its successor agency, and the North Carolina Department of Environment, Health and Natural Resources.

## Section 3.04      Responsibility: Consumer

The consumer has the primary responsibility of preventing pollutants and contaminants from entering his potable water system(s) or the public potable water system. The consumer's responsibility starts at the point of delivery from the public potable water system and includes all of his water system(s). The consumer, **at the consumer's own expense**, shall install, operate, test and maintain approved backflow prevention assemblies as directed by Tuckasegee Water & Sewer Authority. The consumer shall maintain accurate records of test and repairs made to backflow prevention assemblies and shall maintain such records for a minimum period of three (3) years. The records shall be on forms approved by Tuckasegee Water & Sewer Authority and shall include the list of materials or replacement parts used. Following any repair, overhaul, re-piping or relocation of an assembly, the consumer shall have it tested to insure that it is in good operating condition and will prevent backflow. A certified backflow prevention assembly tester shall make tests, maintenance and repairs of backflow prevention assemblies.

## Section 3.05      Responsibility: Certified Backflow Prevention Assembly Tester

When employed by the consumer to test, repair, overhaul, or maintain backflow prevention assemblies, a backflow prevention assembly tester will have the following responsibilities:

The tester will be responsible for making competent inspections and for repairing or overhauling backflow prevention assemblies and making reports of such repair to the consumer and responsible authorities on forms approved by Tuckasegee Water & Sewer Authority. The tester shall include the list of materials or replacement parts used. The tester shall be equipped with and be competent to use all the necessary tools, gauges, manometers and other equipment necessary to properly test, repair, and maintain backflow prevention assemblies. It will be the tester's responsibility to insure that original equipment manufacturer approved parts are used in the repair of a backflow prevention assembly. It will be the tester's further responsibility not to change the design, material or operational characteristics of an assembly during repair or maintenance without prior approval of Tuckasegee Water & Sewer Authority. A certified tester shall perform the work and be responsible for the competency and accuracy of all test and reports. A certified tester shall provide a copy of all test and

repair reports to the consumer and to Tuckaseegee Water & Sewer Authority's Cross Connection Control Department within ten (10) business days of any completed test or repair work. A certified tester shall maintain such records for a minimum period of three (3) years.

All certified backflow prevention assembly testers must obtain and employ backflow prevention assembly test equipment that has been evaluated and/or approved by Tuckaseegee Water & Sewer Authority. All test equipment shall be registered with Tuckaseegee Water & Sewer Authority Cross Connection Control Department. All test equipment shall be checked for accuracy annually (at a minimum), calibrated, if necessary, and certified to Tuckaseegee Water & Sewer Authority as to such calibration, employing an accuracy/calibration method acceptable to Tuckaseegee Water & Sewer Authority.

All certified backflow prevention assembly testers must possess and maintain a current certification through an approved backflow prevention assembly tester certification program, and provide documentation of such status to Tuckaseegee Water and Sewer Authority upon request.

## **Article IV. DEFINITIONS**

### **Section 4.01 Air-Gap Separation**

The term "air-gap separation" shall mean a physical separation between the free flowing discharge end of a potable water supply pipeline and an open and non-pressure receiving vessel. An "approved air-gap separation" shall be at least double the diameter of the supply pipe measured vertically above the overflow rim of the receiving vessel – in no case less than one (1) inch (2.54 cm).

### **Section 4.02 Approved**

The term "approved" as herein used in reference to a water supply shall mean a water supply that has been approved by the North Carolina Department of Environment and Natural Resources, Division of Water Resources, Public Water Supply Section.

The term “approved” as herein used in reference to air-gap separation, a pressure vacuum breaker, a double check valve assembly, a double check detector assembly, a reduced pressure principle backflow prevention assembly, a reduced pressure principle detector assembly, or other backflow prevention assemblies or methods shall mean an approval by Tuckasegee Water & Sewer Authority.

### **Section 4.03      Backflow**

The term “backflow” shall mean the undesirable reversal of flow of water or mixtures of water and other liquids, gases, or other substances into the distribution pipes of the consumer of public potable water system from any source or sources.

### **Section 4.04      Backflow Prevention Assembly-Approved**

The term “approved backflow prevention assembly” shall mean an assembly used for containment and/or isolation purposes that has been investigated and approved by Tuckasegee Water & Sewer Authority and has been shown to meet the design and performance standards of the American Society of Sanitary Engineers (ASSE), the National Sanitation Foundation (NSF) and the American Water Works Association (AWWA), and will only accept those backflow prevention devices/assemblies which appear on the current edition of the List of Approved Backflow Prevention Assemblies generated by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (FCCCHR). All-assemblies installed or replaced on or after January 4th, 2014 shall be “lead free”.

The FCCCHR recommending such an approval, base is the basis of an initial approval of backflow prevention assemblies by Tuckasegee Water & Sewer Authority. To be final approved, an assembly must be readily accessible for in-line testing and maintenance and shall successfully complete a one-year field evaluation within Tuckasegee Water & Sewer Authority water system.

### **Section 4.05      Backflow Prevention Device – Approved**

The term “approved backflow prevention device” shall mean a device used for isolation purposes that has been shown to meet the design and performance standards of the

American Society of Sanitary Engineers (ASSE), the National Sanitation Foundation (NSF) and the American Water Works Association (AWWA).

#### **Section 4.06 Backflow Prevention Assembly – Unapproved**

The term “unapproved backflow prevention assembly” shall mean an assembly that has been investigated by Tuckasegee Water & Sewer Authority and has been determined to be unacceptable for installation within the Tuckasegee Water & Sewer Authority water system. Consideration for disapproval and removal from the “Approved List” shall be based upon, but not limited to the following criteria:

- (a) Due to poor performance standards (i.e., significant failure rate)*
- (b) Lack of or unavailability of repair parts; and/or,*
- (c) Poor service or response from assembly’s factory representative(s).*

#### **Section 4.07 Backflow Prevention Assembly – Type**

A “backflow prevention assembly” shall mean an assembly used to prevent backflow into a consumer or public potable water system. The type of assembly used shall be based on the degree of hazard either existing or potential (as defined herein). The types are:

- (a) Double Check Valve Assembly (DCVA)*
- (b) Double Check Detector Assembly (Fire System) (DCDA)*
- (c) Pressure Vacuum Breaker (PVB)*
- (d) Reduced Pressure Principle Assembly (RP)*
- (e) Reduced Pressure Principle-Detector Assembly (Fire System) (RPDA)*

#### **Section 4.08 Backflow Prevention Assembly Tester – Certified**

The term “certified backflow prevention assembly tester” shall mean a person who has proven their competency to the satisfaction of Tuckasegee Water & Sewer Authority. Each person who is certified to make competent tests, or to repair, overhaul, and make reports on backflow prevention assemblies shall be knowledgeable of applicable laws, rules, and regulations, shall be a licensed plumber or have at least two (2) years experience under and

be employed by a North Carolina licensed plumber or plumbing contractor, or have equivalent qualifications acceptable to Tuckasee Water & Sewer Authority, and must hold a certificate of completion from an approved training program in the testing and repair of backflow prevention assemblies. Backflow assembly testers who hold a certificate of completion from an approved training program shall be required to successfully complete a practical examination administered by Tuckasee Water & Sewer Authority, prior to conducting test and repair work on backflow prevention assemblies in the Tuckasee Water & Sewer water system. Backflow assembly testers, who hold a certificate of completion from a non-approved training program, shall be required to successfully complete a written and practical examination administered by Tuckasee Water & Sewer Authority, prior to conducting test and repair work on backflow prevention assemblies in the Tuckasee Water & Sewer Authority water system.

#### **Section 4.09      Back – Pressure Backflow**

“Back-Pressure Backflow” shall mean any elevation in the consumer water system (by pump, elevation of piping, or steam and/or air pressure) about the supply pressure at the point of delivery that would cause – or tend to cause – a reversal of the normal direction of flow.

#### **Section 4.10      Backsiphonage Backflow**

“Backsiphonage backflow” shall mean a reversal of the normal direction of flow in the pipeline due to a negative pressure (vacuum) being created in the supply line with the backflow source subject to atmospheric pressure.

#### **Section 4.11      Check Valve – Approved**

The term “approved check valve” shall mean a check valve that is drip-tight in the normal direction of flow when the inlet pressure is at least one (1) psi and the outlet pressure is zero. The check valve shall permit no leakage in a direction reversed to the normal flow. The closure element (e.g. clapper, poppet, or other design) shall be internally loaded to promote rapid and positive closure. An approved check valve is only one component of an approved backflow prevention assembly – i.e., pressure vacuum breaker, double check valve assembly, and double check detector assembly, reduced pressure principle assembly, or reduced pressure detector assembly.

#### **Section 4.12 Consumer**

The term “consumer” shall mean any person, firm, or corporation using or receiving water from the Tuckasegee Water & Sewer Authority water system. In the absence of other parties or the failure of other parties to accept the responsibilities herein set forth, the real property owner of record shall be deemed to be the consumer and shall ultimately responsible for compliance with this Ordinance.

#### **Section 4.13 Consumer’s Water System**

The term “consumer’s water system” shall include any water system commencing at the point of delivery and continuing throughout the consumer’s plumbing system, located on the consumer’s premises, whether supplied by public potable water on an auxiliary water supply. The system or systems may be either a potable water system or an industrial piping system.

#### **Section 4.14 Consumer’s Potable Water System**

The term “consumer’s potable water system” shall mean that portion of the privately owned potable water system lying between the point of delivery and point of use and/or isolation protection. This system will include all pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances used to produce, convey, store, or use potable water.

#### **Section 4.15 Containment**

The term “containment” shall mean preventing the impairment of the public potable water supply by installing an approved backflow prevention assembly at the service connection.

#### **Section 4.16 Contamination**

The term “contamination” shall mean an impairment of the quality of the water that creates a potential or actual hazard to the public health through the introduction of hazardous or toxic substances or through the spread of disease by sewage, industrial fluid, or waste.

#### **Section 4.17      Cross Connection**

A “cross connection” shall mean any unprotected actual or potential connection or structural arrangement between a public or a consumer’s water system and any other source or system through which it is possible to introduce any contamination or pollution, other than the intended potable water with which the system is supplied. By-pass arrangements, jumper connections, removable sections, swivel or changeover devices, and other temporary or permanent devices through which or because of which “backflow” can or may occur are considered to be cross connections.

#### **Section 4.18      Double Check Valve Assembly**

The term “double check valve assembly” shall mean an assembly composed of two (2) independently acting, approved check valves, including tightly closing shut-off valves attached at each end of the assembly and fitted with properly located test cocks. This assembly shall only be used to protect against a non-health hazard (i.e., pollution).

#### **Section 4.19      Double Check – Detector Assembly**

The term “double check-detector assembly” shall mean a specially designed assembly composed of a line-size approved double check valve assembly with a specific bypass water meter and a meter-sized approved double check valve assembly. The meter shall register (in U.S. gallons) accurately for only very low rates of flow and shall show a registration for all rates of flow. This assembly shall only be used to protect against a non-health hazard (i.e. pollutant).

#### **Section 4.20      Hazard – Degree Of**

The term “degree of hazard” shall be derived from the evaluation of conditions within a system, which can be classified as either a “pollution” (non-health) or a “contamination” (health) hazard.

#### **Section 4.21 Hazard – Health**

The term “health hazard” shall mean an actual or potential threat of contamination of a physical, hazardous or toxic nature to the public or consumer’s potable water system to such a degree or intensity that there would be a danger to health.

#### **Section 4.22 Hazard – Non-Health**

The term “non-health hazard” shall mean an actual or potential threat to the quality of the public or the consumer’s potable water system. A non-health hazard is one that, if introduced into the public water supply system could be a nuisance to water customers, but would not adversely affect human health.

#### **Section 4.23 Hazard – Pollution**

The term “pollution hazard” shall mean an actual or potential threat to the quality or the potability of the public or the consumer’s potable water system but which would not constitute a health or a system hazard, as defined. The maximum degree or intensity of pollution to which the potable water system could be degraded under this definition would cause a nuisance or be aesthetically objectionable or could cause minor damage to the system or its appurtenances.

#### **Section 4.24 Health Agency**

The term ‘health agency’ shall mean the North Carolina Department of Environment and Natural Resources, Division of Water Resources, Public Water Supply Section .

#### **Section 4.25 Industrial Fluids**

The term “industrial fluids: shall mean 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, or non-health hazard if introduced into a public or consumer potable water system. Such fluids may include, but are not limited to: process waters; chemicals in fluid form; acids and alkalis; oils, gases; etc.

## **Section 4.26 Industrial Piping System – Consumer’s**

The term “consumer’s industrial piping system” shall mean any system used by the consumer for transmission of or to confine or store any fluid, solid or gaseous substance other than an approved water supply. Such a system would include all pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances used to produce, convey, or store substances, which are or may be polluted or contaminated.

## **Section 4.27 Isolation**

“Isolation” is the act of confining a localized hazard within a consumer’s water system by installing approved backflow prevention assemblies. Disclaimer: Tuckasegee Water & Sewer Authority make recommendations, upon facility inspection, as to the usage of isolation devices/assemblies, but does not assume or have responsibility whatsoever for such installations.

## **Section 4.28 Point of Delivery**

“Point of delivery” shall generally be at the property line of the customer, adjacent to the public street where Tuckasegee Water & Sewer Authority’s mains are located, or at a point on the customer’s property where the meter is located. The customer shall be responsible for all water piping and control devices located on the customer’s side of the point of delivery.

## **Section 4.29 Pollution**

The term “pollution” shall mean an impairment of the quality of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonably affect the aesthetic qualities of such water for domestic use.

## **Section 4.30 Potable Water**

The term “potable water” shall mean water from any source which has been investigated by the North Carolina Department of Environment and Natural Resources, Division of Water

Resources, Public Water Supply Section and which has been approved for human consumption.

### **Section 4.31      Public Potable Water System**

The term “public potable water system” shall mean any publicly or privately owned water system operated as a public utility, under a current North Carolina Department of Environment and Natural Resources permit, to supply water for public consumption or use. This system will include all sources, facilities, and appurtenances between the source and the point of delivery such as valves, pumps, pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances used to produce, convey, treat, or store potable water for public consumption or use.

### **Section 4.32      Reduced Pressure Principle Backflow Prevention Assembly**

The term “reduced pressure principle backflow prevention assembly” shall mean an assembly containing within its structure a minimum of two (2) independently acting, approved check valves, together with a hydraulically operating, mechanically independent, pressure differential relief valve located between the check valves and at the same time below the first check valve. 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 check shall be less than the supply pressure. In case of leakage of either check valve, the pressure differential relief valve, by discharge to atmosphere, shall operate to maintain the pressure between the check less than the supply pressure.

The unit shall include tightly closing shut-off valves located at each end of the assembly and each assembly shall be fitted with properly located test cocks. The assembly is designed to protect against a health hazard (i.e., contaminant).

### **Section 4.33      Reduced Pressure Principle – Detector Assembly**

The term “reduced pressure principle-detector assembly” shall mean a specially designed assembly composed of a line-size approved reduction pressure principle backflow prevention assembly with a specific bypass water meter and a meter-sized approved reduced pressure principle backflow prevention assembly. The meter shall register (in U.S.

gallons) accurately for only very low rates of flow and shall show a registration for all rates of flow. This assembly shall be used to protect against health hazards (i.e., contaminant).

#### **Section 4.34      Service Connections**

The term “service connection” shall mean the terminal end of a service connection from the public potable water system, i.e., where Tuckasegee Water & Sewer Authority loses jurisdiction and sanitary control over the water at its point of delivery to the consumer’s water system.

#### **Section 4.35      Vacuum Breaker – Atmospheric Type**

The term “atmospheric vacuum breaker” (also known as the “non-pressure type vacuum breaker”) shall mean a device containing a float-check, a check seat, and an air inlet port. The flow of water into the body causes the float to close the air inlet port. When the flow of water stops the float falls and forms a check valve against back-siphon age and at the same time opens the air inlet port to allow air to enter and satisfy the vacuum. A shut-off valve immediately upstream may be an integral part of the device. An atmospheric vacuum breaker is designed to protect against a non-health hazard (isolation protection only) under a back-siphon age condition only.

#### **Section 4.36      Vacuum Breaker – Pressure Type**

The term “pressure vacuum breaker” shall mean an assembly containing an independently operating internally loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve. The assembly is to be equipped with properly located test cocks and tightly closing shut-off valves attached at each end of the assembly. This assembly is designed to protect against a health hazard (i.e., contaminant) under a back-siphon age condition only.

#### **Section 4.37      Water Purveyor**

The term “water purveyor” shall mean the owner or operator of a public potable water system, providing an approved water supply to the public.

### **Section 4.38      Water Supply – Approved**

The term “approved water supply” shall mean any public potable water supply that has been investigated and approved by the North Carolina Department of Environment and Natural Resources. The system must be operating under a valid health permit. In determining what constitutes an approved water supply, the North Carolina Department of Environment and Natural Resources, Division of Water Resources, Public Water Supply Section has reserved the final judgment as to its safety and potability.

### **Section 4.39      Water Supply – Auxiliary**

The term “auxiliary water supply” shall mean any water supply on or available to the premises other than the purveyor’s approved public potable water supply. These auxiliary waters may include water from another purveyor’s public potable water supply or any natural source such as a well, spring, river, stream, etc., “used water”, or industrial fluids. These waters may be polluted, contaminated, or objectionable and constitute any unacceptable water source over which the water purveyor does not have sanitary control.

### **Section 4.40      Water Supply – Unapproved**

The term “unapproved water supply” shall mean a water supply which has not been approved for human consumption by the North Carolina Department of Environment and Natural Resources.

### **Section 4.41      Water – Used**

The term “used water” shall mean any water supplied by a water purveyor from a public water system to a consumer’s water system after it has passed through the point of delivery and is no longer under the control of the water purveyor.

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*This Ordinance is gender neutral and the masculine gender shall include the feminine and vice versa. Shall is mandatory, may is permissive and discretionary. The use of the singular shall be construed to include the plural and the plural shall include the singular as indicated by the context of its use.*

## **Article V. RIGHT OF ENTRY**

Authorized representative(s) from Tuckasegee Water & Sewer Authority shall have the right to enter, upon presentation of proper credentials and identification, any building, structure, or premises during normal business hours, or at any time during the event of an emergency, to perform any duty imposed by this Ordinance. Those duties may include sampling and testing of water, or inspections and observations of all piping systems connected to the public water supply. Where a user has security measures in force which would require proper identification and clearance before entry into their premises, the user shall make necessary arrangements with the security guards to the end that upon presentation of suitable identification, Tuckasegee Water & Sewer Authority personnel will be permitted to enter, without delay, for the purposes of performing their specific responsibilities. Refusal to allow entry for these purposes may result in discontinuance of water service.

On request, the consumer shall furnish to the Authority any pertinent information regarding the water supply system on such property where cross connections and backflow are deemed possible.

## **Article VI. ELIMINATION OF CROSS CONNECTIONS: DEGREE OF HAZARD**

When cross connections are found to exist, the real property owner, his agent, occupant, or tenant, who shall be determined by Tuckasegee Water & Sewer Authority to be the user or consumer as defined in this Ordinance, will be notified in writing to disconnect the same within the time limit established by Tuckasegee Water & Sewer Authority. The degree of protection required and maximum time allowed for compliance will be based upon the potential degree of hazard to the public water supply system. *The maximum time limits are as follows:*

- (a) Cross connections with private wells or other auxiliary water supplies – immediate disconnection.*
- (b) All facilities that pose a health hazard to the potable water system must have a containment assembly in the form of a reduced pressure principle backflow prevention assembly within 60 days.*
- (c) All industrial and commercial facilities not identified, as a “health hazard” shall be considered non-health hazard facilities. All non-health hazard facilities must install, as a minimum containment assembly, a double check valve assembly within 90 days.*

- (d) If, the judgment of Tuckasegee Water & Sewer Authority, an imminent health hazard exists, water service to the building or premises where a cross connection exists may be terminated unless an air gap is immediately provided, or the cross connection is immediately eliminated.*
- (e) Based upon recommendation from Tuckasegee Water & Sewer Authority, the consumer is responsible for installing sufficient internal isolation backflow prevention assemblies and/or methods (i.e., air gap, pressure vacuum breakers, reduction pressure principle backflow prevention assembly, double check valve assembly).*
- (f) Water mains served by Tuckasegee Water & Sewer Authority but not maintained by the Authority should be considered cross connections, with the degree of hazard to be determined by Tuckasegee Water & Sewer Authority. The degree of protection shall be based upon the degree of hazard, as determined by Tuckasegee Water & Sewer Authority.*
- (g) In the event that a Tuckasegee Water & Sewer Authority Cross Connection Control Inspector does not have sufficient access to view any portion of a private water system (i.e., classified research and development facilities; federal government property) so as to allow a complete evaluation of the degree of hazard associated with such private water systems, an approved reduction pressure principle assembly shall be required as a minimum of protection.*
- (h) No person shall fill special use tanks or tankers containing pesticides, fertilizers, other toxic chemicals or their residues from the public water system except at a location equipped with an air gap or an approved reduced pressure principle backflow prevention assembly properly installed on the public water supply.*

## **Article VII. INSTALLATION OF ASSEMBLIES**

- 1) All backflow prevention assemblies shall be installed in accordance with the specifications furnished by Tuckasegee Water & Sewer Authority and/or the manufacturer's installation instructions and/or in the latest edition of the North Carolina Building Code, whichever is most restrictive.
- 2) All new construction plans and specifications, when required by North Carolina Department of Environment and Natural Resources, Division of Water Resources, Public Water Supply Section, shall be made available to Tuckasegee Water & Sewer Authority for review and approval, and to determine the degree of hazard.
- 3) Ownership, testing, and maintenance of the assembly shall be the responsibility of the consumer.
- 4) All double check valve assemblies must be installed in drainable pits wherever below ground installation is necessary, in accordance with detailed specifications provided by Tuckasegee Water & Sewer Authority.
- 5) Reduced pressure principle assemblies must be installed in a horizontal position and in a location in which no portion of the assembly can become submerged in any substance under any circumstances (pit and/or below grade installations are prohibited).
- 6) Double check valve assemblies may be installed in a vertical position with prior approval from Tuckasegee Water & Sewer Authority's Cross Connection Control Department; provided the flow of water is in an upward direction.
- 7) The installation of a backflow prevention assembly that is not approved must be replaced with an approved backflow prevention assembly.

8) The installer is responsible to make sure a backflow prevention assembly is working properly upon installation and is required to furnish the following information to Tuckasegee Water & Sewer Authority's Cross Connection Control Program Department within fifteen (15) days after a reduced pressure principle backflow preventer (RP), double-check valve assembly (DCVA), pressure vacuum breaker (PVB), double check-detector assembly (DCDA), or reduced pressure principle detector assembly (RPDA) is installed:

*(a) Service address where assembly is located*

*(b) Owner (and address, if different from service address)*

*(c) Description of assembly's location*

*(d) Date of installation*

*(e) Installer (include name, plumbing company represented, plumber's license number, and project permit number)*

*(f) Type of assembly, size of assembly*

*(g) Manufacturer, model number, serial number*

*(h) Test results/report*

9) When it is not possible to interrupt water service, provisions shall be made for a "parallel installation" of backflow prevention assemblies. Tuckasegee Water & Sewer Authority will not accept an unprotected bypass around a backflow preventer when the assembly is in need of testing, repair, or replacement.

10) The consumer shall, upon notification, install the appropriate containment assembly not to exceed the following time frame:

Health Hazard.....60 days

Non-Health Hazard.....90 days

11) Following installation, all RP, DCVA, PVB, DCDA, and RPDA are required to be tested by a certified backflow prevention assembly tester with ten (10) days.

## Article VIII. TESTING AND REPAIR OF ASSEMBLIES

- 1) Testing of backflow prevention assemblies shall be made by a certified backflow prevention assembly tester or may be contracted out to Tuckaseegee Water & Sewer Authority Cross Connection Department at the consumer's expense. Such tests are to be conducted upon installation and annually thereafter or at a frequency established by Tuckaseegee Water & Sewer Authority regulations. A record of all testing and repairs is to be retained by the customer. Copies of the records must be provided to Tuckaseegee Water & Sewer Authority's Cross Connection Control Department within ten (10) business days after the completion of any testing and/or repair work.
  
- 2) Any time that repairs to backflow prevention assemblies are deemed necessary, whether through annual or required testing or routine inspection by the owner or by Tuckaseegee Water & Sewer Authority, these repairs must be completed within a specified time in accordance with the degree of hazard. In no case shall this time period exceed:
  - (a) *Health Hazard Facilities - 14 days*
  - (b) *Non-Health Hazard Facilities - 21 days*
  
- 3) All backflow prevention assemblies with test cocks are required to be tested annually or at the frequency established by Tuckaseegee Water & Sewer Authority's regulations. Testing requires a water shutdown usually lasting five (5) to twenty (20) minutes. **For facilities that require an uninterrupted supply of water**, and when it is not possible to provide water service from two separate meters, provisions shall be made for a "parallel installation" of backflow prevention assemblies.
  
- 4) All certified backflow prevention assembly testers must obtain and employ backflow prevention assembly test equipment that has been evaluated and/or approved by Tuckaseegee Water & Sewer. All test equipment shall be registered with Tuckaseegee Water & Sewer Authority's Cross Connection Control Department. All test equipment shall be checked for accuracy annually (at a minimum), calibrated, if necessary, and certified to Tuckaseegee Water & Sewer Authority to such accuracy/calibration, employing a calibration method acceptable to Tuckaseegee Water & Sewer Authority.

- 5) It shall be unlawful for any customer or certified tester to submit any record to Tuckaseegee Water & Sewer Authority that is false or incomplete in any material respect. It shall be unlawful for any consumer or certified tester to fail to submit to Tuckaseegee Water & Sewer Authority any record that is required by this Ordinance. Such violations may result in any of the enforcement actions outlined in this Ordinance.

## **Article IX. FACILITIES REQUIRING PROTECTION**

Approved backflow prevention assemblies shall be installed on the service line to any premises that Tuckaseegee Water & Sewer Authority has identified as having a potential for backflow.

Tuckaseegee Water & Sewer Authority has identified the following types of facilities or services as having a potential for backflow of non-potable water into the public water supply system. Therefore, an approved backflow prevention assembly will be required on all such services according to the degree of hazard present. Other types of facilities or services not listed below may also be required to install approved backflow prevention assemblies if determined necessary by Tuckaseegee Water & Sewer Authority. As a minimum requirement, all commercial services will be required to install a Double Check Valve Assembly, unless otherwise listed below.

*DCVA = Double Check Valve Assembly*

*RP = Reduced Pressure Principle Assembly*

*DCDA = Double Check Detector Assembly*

*RPDA = Reduced Pressure Detector Assembly*

*AG = Air Gap*

*PVB = Pressure Vacuum Breaker*

- 1) Aircraft and Missile Plants: RP
- 2) Automotive Services Stations, Dealerships, etc.
  - a) *Non Health Hazard: DCVA*
  - b) *Health Hazard: RP*
- 3) Automotive Plants: RP
- 4) Auxiliary Water Systems:
  - a) *Approved Public/Private Water Supply: DCVA*
  - b) *Unapproved Public/Private Water Supply: AG*
  - c) *Used Water and Industrial Fluids: RP*
- 5) Bakeries:
  - a) *No Health Hazard: DCVA*
  - b) *Health Hazard: RP*
- 6) Beauty Shops/Barber Shops
  - a) *No Health Hazard: DCVA*
  - b) *Health Hazard: RP*
- 7) Beverage Bottling Plants: RP
- 8) Breweries: RP
- 9) Buildings – Hotels, apartment houses, public and private buildings, or other structures having unprotected cross connections.
  - a) *(under five stories) No Health Hazard: DCVA*
  - b) *(under five stories) Health Hazard: RP*
  - c) *(over five stories) All: RP*
- 10) Canneries, packing houses, and rendering plants: RP
- 11) Chemical plants – Manufacturing, processing, compounding or treatment: RP
- 12) Chemically contaminated water systems: RP

- 13) Commercial car-wash facilities: RP
- 14) Commercial greenhouses: RP
- 15) Commercial sales establishments (department stores, malls, etc.)
  - a) No Health Hazard: DCVA*
  - b) Health Hazard: RP*
- 16) Concrete/asphalt plants: RP
- 17) Dairies and cold storage plants: RP
- 18) Dye works: RP
- 19) Film laboratories: RP
- 20) Fire Systems

**Systems ¾ inch to 2 inch**

- a) No Health Hazard: DCDA*
- b) Health Hazard: (Booster Pumps, Foam, Antifreeze Solution, etc.): RP*

**Systems 2 ½ inch to 10 inch or larger**

- a) No Health Hazard: DCDA*
- b) Health Hazard: (Booster Pumps, Foam, Antifreeze Solution, etc.): RPDA*

- 21) Hospitals, medical buildings, sanitariums, morgues, mortuaries, autopsy facilities, nursing and convalescent homes, medical clinics, and veterinary hospitals: RP
- 22) Industrial facilities:
  - a) No Health Hazard: DCVA*
  - b) Health Hazard: RP*

- 23) Jails and Prisons: RP
- 24) Laundries:
- a) No Health Hazard: DCVA*
  - b) Health Hazard: (i.e., Dry Cleaners): RP*
- 25) Lawn irrigation systems (split taps)
- a) No Health Hazard: DCVA*
  - b) Health Hazard: (Booster Pumps, Chemical Systems): RP*
- 26) Metal manufacturing, cleaning, processing, and fabricating plants: RP
- 27) Mobile home parks
- a) No Health Hazard: DCVA*
  - b) Health Hazard: RP*
- 28) Oil and gas production, storage or transmission properties: RP
- 29) Paper and paper products plants: RP
- 30) Pest control (exterminating and fumigating): RP
- 31) Plating plants: RP
- 32) Power plants: RP
- 33) Radioactive materials or substances – plants or facilities handling: RP
- 34) Restaurants:
- a) No Health Hazard: DCVA*
  - b) Health Hazard: RP*
- 35) Restricted, classified, or other closed facilities: RP
- 36) Rubber plants (natural or synthetic): RP
- 37) Sand and Gravel plants: RP
- 38) Schools and colleges: RP
- 39) Sewage and storm drain facilities: RP

40) Swimming Pools: RP

41) Waterfront facilities and industries: RP

All assemblies and installations shall be subject to inspection and approval by Tuckasegee Water & Sewer Authority.

## **Article X. CONNECTIONS WITH UNAPPROVED SOURCES OF SUPPLY**

- 1) No person shall connect or cause to be connected any supply of water or water system not approved by Tuckasegee Water & Sewer Authority. Any such connections allowed by or approved by the North Carolina Department of Environment Health and Natural Resources to the water system of Tuckasegee Water & Sewer Authority must be in conformance with the backflow prevention requirements of this Ordinance.
- 2) In the event of contamination or pollution of a public or consumer potable water system, the consumer shall notify Tuckasegee Water & Sewer Authority immediately in order that appropriate measures may be taken to overcome and eliminate the contamination or pollution.

## **Article XI. ENFORCEMENT**

- 1) The property owner, agent, manager, supervisor, tenant or person in charge of any installation found not to be in compliance with the provisions of this Ordinance shall be notified in writing with regard to the corrective action(s) to be taken. The time for compliance shall be in accordance with this Ordinance.

- 2) The property owner, agent, manager, supervisor, tenant or person in charge of any installation that remains in non-compliance after the time prescribed in the initial notification, shall be considered in violation of this Ordinance, and may be issued a civil citation by Tuckaseegee Water & Sewer Authority. Said violation shall specify the nature of the violation and the provision(s) of this Ordinance violated, and further notify the offender that the civil penalty for said violation is as set forth in paragraph (3) below and is to be paid to Tuckaseegee Water & Sewer Authority, 1246 West Main Street, Sylva, North Carolina, within (30) days.

If the penalty prescribed herein is not paid within the time allowed, Tuckaseegee Water & Sewer Authority may initiate a civil action in the nature of a debt collection and recover the sums set forth in paragraph (3) below plus the cost of the action.

- 3) Any offender who shall continue any violation beyond the time limit provided for in the aforementioned notification shall be subject to a civil penalty of **up to \$1,000 per violation**. Each day in which a violation of any provision of this Ordinance shall occur or continue shall constitute a separate and distinct offense.
- 4) If, in the judgment of Tuckaseegee Water & Sewer Authority, any property owner, agent, manager, supervisor, tenant or person in charge of any installation found to be in non-compliance with the provisions, of this Ordinance, neglects their responsibility to correct any violation, it may result in discontinuance of water service until compliance is achieved.
- 5) Failure of a customer or certified tester to submit any record required by this Ordinance, or the submission of falsified reports/records may result in a **civil penalty of up to \$1,000 per violation**. If a certified backflow prevention assembly tester submits falsified records to Tuckaseegee Water & Sewer Authority, the Authority shall take the necessary actions to revoke certification to test backflow prevention assemblies within the potable water system for a time period not to exceed one (1) year. The tester will then be required to complete an approved certification course to acquire a new certification. Falsification made to records/reports after becoming re-certified shall result in the permanent revocation of backflow testing certification, in addition to a civil penalty (as stated herein).

- 6) The Executive Director of Tuckaseegee Water & Sewer Authority or his or her authorized representative shall administer the enforcement of this program.
- 7) Requests for extension of time shall be made in writing to the Executive Director of Tuckaseegee Water & Sewer Authority or his or her authorized representative. All other appeals shall be made in accordance with the following procedures:
  - a) *Adjudicatory Hearings. A consumer assessed a civil penalty under this section shall have the right to an adjudicatory hearing before a hearing officer designated by the Executive Director of Tuckaseegee Water & Sewer Authority upon making written demand, identifying the specific issues to be contended, to the Executive Director of Tuckaseegee Water & Sewer Authority within thirty (30) days following notice of final decision to assess a civil penalty. Unless such demand is made within the time specified herein, the decision on the civil penalty assessment shall be final and binding.*
  - b) *Appeal Hearings. Any decision of the Tuckaseegee Water & Sewer Authority hearing officer made as a result of an adjudicatory hearing held under paragraph (A) of this Section may be appealed by any party, to the Tuckaseegee Water & Sewer Authority Board of Directors upon filing a written demand within (10) days of receipt of notice of the decision. Hearings held under this section shall be conducted in accordance with Tuckaseegee Water & Sewer Authority hearing procedures. Failure to make written demand within the time specified herein shall bar further appeal. Tuckaseegee Water & Sewer Authority Board of Directors shall make a decision on the appeal within ninety (90) days of the date the appeal was filed and shall transmit a written copy of the decision by registered or certified mail to the consumer.*
  - c) *Official Record. When a final decision is issued under Section (B) above, Tuckaseegee Water & Sewer Authority shall prepare an official record of the case that includes:*
    - i) *All notices, motions, and other like pleadings;*
    - ii) *A copy of all documentary evidence introduced;*
    - iii) *A certified transcript of all testimony taken, if testimony is transcribed. If testimony is taken and not transcribed, then a narrative summary of any testimony taken.*
    - iv) *A copy of the final decision of Tuckaseegee Water & Sewer Authority.*

The Official Record prepared under this Section shall constitute the Official Record for purposes of judicial review in the General Court of Justice as provided for in paragraph (d) of this section.

*d) Any consumer against whom a final decision of Tuckaseegee Water & Sewer Authority is entered, pursuant to the hearing procedure under Section (B) above, may appeal the order or decision by filing a written petition for judicial review within thirty (30) days after receipt of notice by certified mail of the order or decision. Such appeal shall be affected by filing in the General Court of Justice of Jackson County, North Carolina or of the county where the order or decision is effective, a copy of which shall be served upon Tuckaseegee Water & Sewer Authority through its Executive Director or his or her designated representative.*

Within thirty (30) days after receipt of the copy of the petition for judicial review, Tuckaseegee Water & Sewer Authority shall transmit to the reviewing court the original or a certified copy of the official record, as outlined in Section (C) above.

## **Article XII. ADOPTION**

This Ordinance shall be in full force and effective from and after its passage, approval and publication, as provided by law.

APPROVED, this \_\_\_\_\_ day of \_\_\_\_\_, 2014

\_\_\_\_\_

Mike Fitzgerald, Chairman

Sealed

&

Attested

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Nancy Hoyle, Secretary