WIMBERLEY WATER SUPPLY CORPORATION

CROSS CONNECTION CONTROL PROGRAM

Adopted by the Board of Directors August 18, 2021

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EXHIBIT A RESOLUTION RES-34-2021

INTRODUCTION

Title 30 of the Texas Administrative Code (30 TAC), Chapter 290, prohibits PWSs from connecting to an actual or potential contamination hazard without first protecting the potable-water supply. The TCEQ rules require a PWS to:

- adopt plumbing ordinances, regulations, and/or service agreements
- require customer service inspections
- require backflow protection using appropriate backflow prevention assemblies
- require those assemblies to be tested to ensure that they are working correctly

The Texas Commission on Environmental Quality Rules and Regulations (30TAC290) makes the Public Water Supply responsible for recognizing and evaluating hazards within the water distribution system. Further, when a hazard is identified, the PWS must ensure that the customers are protected from contamination and harm as a result of the hazard. The rules give the PWS the authority and responsibility to terminate the water service where an unprotected health hazard is found. The PWS may only reinstate the water service when the hazard no longer exists or after it has been properly isolated using proper backflow prevention.

Due to the fact that the effects of a backflow event can be so severe, there is no grandfather clauses that apply to cross-connection control and/or backflow prevention.

A backflow incident meets the definition and intent of an accident that has a negative impact on the quality and delivery of potable water. Additionally, according to 30TAC290.46(w)(5), a backflow event must be reported to the TCEQ. The TCEQ operates a 24-hour toll-free telephone number for reporting such events (888-777-3186).

SECTION 1. PROGRAM PURPOSE

The purpose of the Cross-Connection Control Program is to protect the health and safety of the member/customers of WIMBERLEY WATER SUPPLY CORPORATION, to fulfill the legal requirements of the Safe Drinking Water Act, and comply with the Rules and Regulations for State of Texas Public Water Systems. No Cross-Connection shall be created, installed, used or maintained within the service area of the Wimberley Water Supply Corporation except in accordance with this program.

SECTION 2. PROGRAM ADMINISTRATOR

A. The General Manager of Wimberley Water Supply Corporation is the designated Program Administrator for the Corporation's Cross-Connection Control Program. As Program Administrator, the General Manager will be experienced and qualified in Cross-Connection Control and have the license as a Customer Service Inspector.

B. The General Manager has the authority to conduct or to have conducted the various required inspections, to specify the Cross-Connection Control Assembly/Device that is required based on the completed inspection(s) or survey(s), to specify the type of Assembly/Device, to develop certain tests and/or procedures for the qualifying of Backflow Prevention Assembly/Device Testers, to establish recordkeeping processes related to the administration of the program, and to supervise and implement the program for maximum benefit to the Corporation's water supply system and the member/customers that are served by this system. Installation, testing, and annual testing of the Backflow Prevention Device is the responsibility of the member/customer.

SECTION 3. PLUMBING CODE

As a condition of water service, all members/customers shall install, maintain, and operate their piping and plumbing systems in accordance with the International Plumbing Code as approved by the Texas State Board of Plumbing Examiners.

SECTION 4. MULTIPLE CONNECTIONS

Any premises requiring multiple service connections for adequacy of supply, fire protection, or other purposes will be required to install the approved Backflow Device on each service connection.

SECTION 5. DEFINITIONS

For the purpose of this Cross-Connection Control Program, the following definitions shall apply unless the context clearly indicates or requires a different meaning. If a word or term used in this Program is not contained in the following list, its definition or other technical terms used

shall have the meanings or definitions listed in the latest edition of the Manual of Cross-Connection Control published by the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California (USC).

A. **APPROVED BACKFLOW PREVENTION ASSEMBLY:** An assembly to counteract back pressures or prevent back siphonage. This assembly must appear on the list of approved assemblies issued by the Corporation

B. **AUXILIARY SUPPLY:** any water source or system other than the public water supply that may be available in the building or on the premises

C. **BACKFLOW:** the flow in a direction opposite to the normal flow or the introduction of any foreign liquids, gases, or substances into the Corporation's water supply system

D. **CONTAMINATION:** the entry into or presence in a public water supply system of any substance which may be deleterious to health and/or the quality of the water

E. **CORPORATION:** Wimberley Water Supply Corporation ("Corporation," "Wimberley WSC," or "WWSC"), the WWSC Board of Directors or the WWSC Program Administrator/General Manager or other Corporation Employees, as the context dictates

F. **CROSS-CONNECTION:** any physical arrangement where the public water system is connected, either directly or indirectly (actual or potential), with any other non-potable water system, used water system or auxiliary supply, sewer, conduit, swimming pool, storage reservoir, landscape irrigation system, swamp coolers, air conditioner units, fire protection system, or any other appurtenance or system which contains, or may potentially contain contaminated water, sewage, or other liquid or solid or gas, or water of unsafe or questionable quality which may be capable of contaminating or polluting the Corporation's water system. Bypass arrangements, jumper connections, removable sections, swivel or change-over assemblies, or other temporary or permanent appurtenances and/or assemblies through which, or because of which, backflow may occur, are considered to be cross-connections

G. **DEGREE OF HAZARD:** all actual or potential cross-connections will be classified as a "Low Hazard" (non-health hazard) or "High Hazard" (health hazard)

1. "Low Hazard" means that the substance which could potentially backflow into the system may be objectionable, but not hazardous to one's health.
2. "High Hazard" means that the substance which could potentially backflow into the water system may cause illness or death (also known as "High Health Hazard")

H. **DOUBLE CHECK VALVE ASSEMBLY:** an assembly of two internally loaded, independently acting check valves, with shut-off valves on each side of the check valves, and factory-installed test cocks for checking the water-tightness of each check valve (Double Check valve assemblies do not provide air gap protection)

I. **DOUBLE DETECTOR CHECK VALVE ASSEMBLY:** an assembly similar to the DC assembly, to be utilized on Fire-Sprinkler Systems, with a meter to detect any flow through the Fire Line and into the System (Only Double Detector Check Valve assemblies approved by the Corporation are allowed for installation)

J. **HEALTH HAZARD:** an actual or potential threat of contamination of a physical or toxic nature to the Corporation's public water supply system, or the consumer's potable water system that would be a danger to health

K. **INSPECTOR:** a Cross-Connection Control Inspector (Customer Service Inspector) licensed by the State of Texas (TCEQ or TSBPE) and qualified to inspect for cross-connection hazards or contamination-type hazards and is properly registered with Wimberley Water Supply Corporation

L. **PLUMBING HAZARD:** an internal or plumbing-type cross-connection in a consumer's potable water system that may be either a pollution hazard or a contamination-type hazard

M. **PLUMBING CODE:** universal plumbing code as adopted by the Texas State Board of Plumbing Examiners

N. **POLLUTION HAZARD:** an actual or potential threat to the physical properties of the water system or the potability of the public or consumer's water system, but which would not constitute a health or safety hazard, as defined. The maximum degree of 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

O. **POTABLE WATER:** water that is safe for human consumption as defined by the Texas Commission on Environmental Quality (TCEQ)

P. **PREMISES:** any piece of land to which water is provided including all improvements, mobile structures, dwellings, and structures located on this land

Q. **REDUCED PRESSURE PRINCIPLE ASSEMBLY:** an approved assembly containing two independently acting check valves together with a hydraulically-operated and mechanically independent pressure differential relief valve located between the check

valves and below the first check valve. The assembly shall include factory-installed test cocks and two shut-off valves for isolation and testing of the check valve (Only RP assemblies approved by the Corporation are allowed for installation within Corporation boundaries)

R. **SYSTEM:** the Public Water Supply System of Wimberley Water Supply Corporation

S. **SYSTEM HAZARD:** an actual or potential threat to the safety and welfare of the Public Water Supply System of the Corporation, via the actual or potential entry of a contaminant or a pollutant through a cross-connection

T. **TESTER:** a person that is a licensed (by TCEQ) Backflow Prevention Assembly Tester, has met the qualifications of the State of Texas (TCEQ) for testing of Backflow Prevention Assemblies, and is properly registered with Wimberley Water Supply Corporation

U. **TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ):** the State of Texas Agency that handles environmental matters within the State, including the promulgation of "Rules and Regulations for Public Water Systems", enforcement of the EPA's "Safe Drinking Water Act" (SDWA) at the state level, and the licensing of Customer Service Inspectors, Backflow Prevention Assembly Testers, and Water System Operators

V. **VACUUM BREAKER, ATMOSPHERIC (AVB):** AVBs protect against back siphonage and should not be used if there is a threat of back pressure backflow.

W. **VACUUM BREAKER, PRESSURE (PVB):** PVBs are for back siphonage only and should not be installed where there is a possibility of back pressure.

X. **WATER USE:**

1. "*Residential Use"* shall include single family residences, duplexes, multiplex housing and apartments where the individual units are each on a separate meter or where two or more units served by one meter are all used for residential purposes.

2. "*Non-residential Use"* shall include all uses not specifically included in "Residential use" listed above (Sub-Section 3.X.1).

3. "*Permanent Water Service"* shall be supplied to any connection within the boundaries of Wimberley Water Supply Corporation following the completion or compliance with all of the requirements of this policy and the policies of the Corporate Tariff of Wimberley Water Supply Corporation.

4. "*Temporary Water Service"* shall be water service provided before the completion of or compliance with the requirements of this policy or the Corporate Tariff of Wimberley Water Supply Corporation and is granted for a maximum of 180 days from the start of service.

SECTION 6. SERVICE AGREEMENT

The Texas Commission on Environmental Quality Rules and Regulations require every Public Water Supply to adopt a Plumbing Ordinance, Plumbing Regulations, or a Service Agreement. Wimberley Water Supply Corporation, being a non-governmental entity, chose to adopt the Service Agreement.

The Service Agreement is a document that gives the PWS authority to implement a Cross-Connection Control Program and to enforce said program. It is important to note that the adopted Service Agreement and the Cross-Connection Control Program may be more stringent than the TCEQ Rules and Regulations, however, they may not be less stringent. Further, the Service Agreement and the Cross-Connection Control Program can allow for a more rigorous testing of backflow preventers and a more rigorous program for the prevention of backflow. While the Texas Commission on Environmental Quality rules and regulations address the hazards posed to the Public Water Supply, the PWS may adopt specific requirements in the Service Agreement and/or the Cross-Connection Control Program. The Service Agreement strengthens the enforcement of these regulations.

The Customer Service Agreement is an agreement between the PWS and the Member/Customer. The Service Agreement additionally gives the PWS the authority to enforce the requirements of the Cross-Connection Control Program, the rules and regulations of the Corporation, and the rules and regulations of the Texas Commission on Environmental Quality.

A copy of the Service Agreement can be found in Appendix B.

SECTION 7. CUSTOMER SERVICE INSPECTIONS REQUIRED

Customer Service Inspections are the most important part of a successful cross-connection control program.

The Customer Service Inspector (CSI) must be specially trained to inspect private water distribution facilities to determine the presence of cross-connections, potential contamination hazards, and illegal materials containing lead and copper. However, the CSI is not permitted to

perform plumbing inspections. To conduct a Customer Service Inspection the Inspector must be licensed as a CSI by the Texas Commission on Environmental Quality, a Plumbing Inspector, or a licensed plumber with a "Water Supply Protection Specialist" endorsement.

Inspections regarding the location of actual or potential cross-connections and the status of the plumbing fixtures and related lead content of the solder on copper water lines shall be conducted by those qualified as Customer Service Inspectors (having the CSI License or WSPS endorsement on the holder's plumbing license).

In some cases, the Inspector may need to use more than one CSI certificate to adequately document the inspection of a facility or property. The results of the CSI are intended to identify any existing cross-connections or hazards that may pose a threat to the water distribution system.

A copy of the Customer Service Inspection Certificate can be found in Appendix D.

CUSTOMER SERVICE INSPECTION REQUIRED

At a minimum, a CSI is required under the following conditions:

A. NEW CONSTRUCTION: Shall inspect for cross-connections after the finalization of the construction activities and prior to the granting of “permanent” water service. All pressure relief valves and thermal expansion devices must be in compliance with the plumbing code. Inspectors shall also ensure that the requirements of the State Lead Ban, as outlined in the State’s Rules and Regulations for Public Water Supply Systems, are followed:

“The use of pipe and pipe fittings that contain more than 0.25 percent lead or solder and flux that contains more than 0.2 percent lead is prohibited in the following circumstances: (a) For installation and repair of any public water supply, and (b) For installation or repair of any plumbing in a residential or non-residential facility providing water for human consumption and connected to a public drinking water system. This requirement will be waived for lead joints that are necessary for repairs to cast iron pipes”.

B. SALE OR TRANSFER OF PROPERTY OWNERSHIP: A new CSI may be required upon the sale or transfer of ownership for property. (If Applicable)

C. CHANGE OF RENTER: A new CSI may be required after a renter vacates the premises and before new occupancy occurs at the property. (If Applicable)

D. NEW WATER SERVICE CONNECTION/INSTALLATION

E. ANY MODIFICATION OF, EXPANSION TO, OR UPGRADE TO THE PRIVATE WATER DISTRIBUTION OR PLUMBING SYSTEM

F. FOLLOWING DISCONNECTION/RECONNECTION OF WATER SERVICE FOR NON-PAYMENT

G. ALTERNATE WATER SOURCE ON PREMISES: Such as rainwater harvesting, private well or creek/river pump

RESPONSIBILITIES

The responsibilities for a CSI are as follows:

A. BUILDER/PLUMBER RESPONSIBILITIES: (a) Builders/Plumbers cannot install pipe or pipe fittings that contain more than 0.25 percent lead; (b) cannot utilize solder and flux that contains more than 0.2 percent lead; (c) must review the Material Safely Data Sheets (MSDS) for all pipes and products to ensure that this standard is met, and these Material Safety Data Sheets shall be available for the Inspector's examination; and (d) Builders/Plumbers must ensure that the pipe is properly labeled for installation into a Potable Water Supply System. The correct pipe label is PW-NSF (Potable Water-National Sanitation Foundation).

B. INSPECTOR RESPONSIBILITIES: Within the legal requirements of the Customer Service Inspection, (a) Customer Service Inspectors are responsible for inspecting pipes, fittings, fixtures, and solder boxes; and (b) they should take a sample(s) to verify compliance with the Lead Ban Standard. This Inspection (CSI) is not a Plumbing Inspection.

C. PROCEDURES REGARDING CUSTOMER SERVICE INSPECTION: The Customer Service Inspection shall be completed no later than thirty (30) days following any of the conditions listed in Section 5 and before **"permanent"** service may be granted. Inspections shall be completed by licensed CSI inspectors employed by WWSC. After the inspection has been completed, the person or entity shall have up to fifteen (15) days to correct deficiencies, depending upon the severity of the deficiency, install new cross-connection control devices or assemblies as allowed by the Program Administrator, make repairs to existing assemblies or devices, or repairs to the plumbing system. The person or entity will receive a CSI Form from the inspector that outlines the deficiency or deficiencies that require correction, the cross-connection control assemblies/devices that must be installed, inspected or repaired, and the date of the second inspection to ensure that these items have been completed as required by the Corporation.

Water service will be considered as **"temporary"** service until such time that the Customer Service Inspection is satisfactory, or for a period of time not to exceed thirty

(30) days, at which time the water service will be disconnected until a satisfactory inspection is obtained.

D. RE-INSPECTION: If the first Customer Service Inspection is not satisfactory, then a second or additional Inspection [Re-Inspection(s)] will be necessary, until such time that the Inspection indicates full compliance with the Corporation's "Cross-Connection Control Program" and all applicable State Laws.

E. DISCONNECTION OF WATER SERVICES: If the Customer fails to allow a Customer Service Inspection within thirty (30) days of requesting permanent service, or if the Customer fails to obtain a Re-Inspection if required, then the specific water service may be disconnected or at the option of Wimberley Water Supply Corporation the appropriate backflow prevention device may be installed at the member/customer's expense, as per the Wimberley WSC Tariff, by Wimberley WSC after giving notice of intended disconnection or installation of a backflow prevention device.

OTHER INSPECTIONS AND SURVEYS

In addition to the inspections outlined in the previous sections, the Corporation may require other inspections and surveys associated with the prevention and elimination of cross-connections, consistent with the Corporation's protection of its water supply system. Disconnection of water service, after proper notice, may be initiated if the Member/Customer, Person, or Entity fails to conform to the Regulations of the Corporation or the Laws of the State of Texas, as pertaining to Cross-Connection Control.

THE CERTIFICATE

The completed original Customer Service Inspection Certificate must be returned to Wimberley Water Supply Corporation within ten (10) business days of completion of the inspection. The member/customer shall retain a copy of the completed certificate and the inspector shall retain a copy of the completed certificate for a minimum of three years from the date of successful inspection.

FEES AND PAYMENT

Wimberley Water Supply Corporation requires the member/customer to pay a Customer Service Inspection (CSI) fee in the amount stated in the Corporation's Meter Installation Cost for any CSI performed at properties with water service provided by WWSC. This includes all new memberships, membership transfers, and rental agreements (Alternate Billing Agreements – ABA).

ACCESS TO PREMISES

In conjunction with the Wimberley WSC Cross-Connection Control Program and Corporate Tariff, authorized Employees of the Corporation shall have access during reasonable hours to all parts of a premise and within the building or buildings to which water is supplied. If any water user refuses access to premises or to the interior of a structure at a reasonable time and after reasonable notice for inspection by a licensed inspector, a reduced pressure principle (RPZ) assembly may be required to be installed at the service connection to that premise. The member/customer will bear the full cost of purchase and installation.

SECTION 8. BACKFLOW PREVENTION ASSEMBLY/DEVICE REQUIREMENT

PURPOSE

An effective Cross-Connection Control Program must include appropriate means to prevent backflow. This is typically accomplished via the use of backflow prevention assemblies. The use of a backflow prevention assembly essentially limits the quantity of water exposed to a hazard or contamination.

SELECTION

The Program Administrator/General Manager of Wimberley Water Supply Corporation shall determine the type of Backflow Prevention Assembly/Device to be installed. This determination will be based on the type and degree of hazard. The Program Administrator/General Manager will use as a guide the Texas Commission on Environmental Quality (TCEQ) rules and regulations (30TAC290D Appendix I), the Manual on Cross-Connection Control, or the Cross-Connection Control Program of Wimberley Water Supply Corporation (whichever is more stringent), for the determination of the degree of hazard.

The Texas Commission on Environmental Quality (TCEQ) rules and regulations make a distinction between health and non-health hazards. A health hazard most often involves a contaminate of some type. A health hazard is a substance that may cause death, illness, or disease. A non-health hazard is a nuisance, or may be a substance that is aesthetically objectionable when introduced in the water.

The strongest protection from backflow is always the Air Gap Method. However, when using the air gap method, the water on the customer side is often times exposed to the atmosphere and possible contamination. Additionally, water distribution system pressure is lost and as a result a pump and pressure tank must be utilized to provide pressure on the customer side. The next strongest protection from backflow is the Reduced Pressure Principle Backflow Prevention

Assembly, commonly known as RP, RPZ, or RPBA. This device works under all conditions of backflow.

The minimum circumstances that initiate the determination of a required Backflow Prevention Assembly/Device are listed in the following:

A. If the facility contains or may contain the "Typical Hazards" outlined in the Appendix of this Cross-Connection Control Program;

B. The nature and extent of any activity on the premises, or the materials used in connection with any activity on the premises, or materials stored on the premises that could contaminate or pollute the drinking water supply;

C. Premises having cross-connections or potential cross-connections as described in the DEFINITIONS Section of this Program;

D. Internal cross-connections that are not correctable, or intricate plumbing system arrangements which make it impractical to ascertain the existence of cross-connections or potential cross-connections;

E. There is a repeated history of cross-connections being established or re-established on the premises;

F. There is unduly restricted entry so that inspections for cross-connections cannot be made with sufficient frequency or with sufficient notice to assure that cross-connections or potential cross-connections do not exist;

G. Materials of a toxic or hazardous nature are being used such that if a backflow incident should occur, a health hazard could result;

H. There is an existing or newly installed Fire Sprinkler System on the premises;

I. An appropriate cross-connection control survey has not been filed with the Corporation or an inspection for cross-connection has been denied by the customer or potential customer;

J. Wimberley Water Supply Corporation requires that ALL existing and future automatic irrigation systems supplied by WWSC be equipped with an RPZ Backflow Preventer located at the point of entry from customer service line to irrigation system;

K. When a building is constructed for non-residential purposes, and the end-use of such building is not established or determined or if the end-use could change, a reduced pressure principle backflow prevention assembly shall be installed by the

member/customer at the service connection to provide protection of the public water supply in the event of the most hazardous use of the building;

L. Any used water return system that has been approved by the Program Administrator/General Manager;

M. In the event a point-of-use assembly has not had required testing and/or repairs, has continuously failed the required testing, or the situation or hazard is such that a point-of-use assembly may not provide sufficient reliability, a premise isolation assembly shall be installed at the service connection by the owner or renter of the property;

N. Additions and/or rearrangements have been made to the plumbing system without notification to the Corporation or without the appropriate inspections;

O. All multi-story buildings greater than three (3) stories in height or any building with a booster pump or elevated storage tank;

P. Hose bibs that are not protected by an approved back siphonage backflow preventer permanently mounted on the discharge side of the valve;

Q. In addition to the above requirements, and based on the experience and judgment of the Program Administrator/General Manager, installation of the approved backflow prevention assembly may be deemed necessary to accomplish the purpose of these Cross-Connection Control Program requirements and regulations;

R. Lawn sprinkler or Landscape Irrigation System;

S. If the account has a history of cross-connections and/or continued leaks;

T. Service Re-connection due to non-pay disconnect.

CHECK VALVES

Check valves in and of themselves are not considered backflow prevention assemblies. Check valves cannot be tested in accordance with the standards set out by the University of Southern California. Additionally, the valve seats often times become degraded or fouled thus allowing contaminants to backflow through them.

LOCATION

The Assembly/Device (if required) shall be installed at the required location, as designated by the Program Administrator.

All hose bibs (interior or exterior) shall be protected by an approved hose bib vacuum breaker permanently mounted on the discharge side of the valve (set screws must be broken to prevent removal of device).

INSTALLATION

To ensure proper operation, inspection, testing, repair, and maintenance of these assemblies and devices, the installation requirements for these assemblies and devices is outlined in the following:

A. The installation shall be accomplished by a plumber that is licensed by the Texas State Board of Plumbing Examiners as a Master Plumber or one who is employed by a plumber employed by a Master Plumber. Under certain circumstances the installation may be accomplished by the home owner. The property owner or renter shall be responsible for the installation and testing of the assembly and all related costs of the appropriate and approved Backflow Prevention Assembly/Device. The installation of the assembly/device shall be accomplished by an individual or company qualified to make such installations within the boundaries of Wimberley Water Supply Corporation.

B. No part of a backflow prevention assembly/device shall be submerged in water or installed in a location that is subject to flooding. If a double check valve assembly is installed in a vault, with the written approval of the Program Administrator, brass plugs are required in the test ports at all times except during the testing process, and adequate drainage shall be provided.

C. Installation of assemblies and devices shall be made at the following locations:

    1. Backflow Prevention Assemblies utilized for premise (service) contaminant (if required) shall be installed on the water service line on the customer's side of the meter as near as practical to this meter, however, in no case more than 18" from the water meter, and prior to any branches in the water service line located on the customer's premises.

    2. Point-of-Use (internal) Backflow Prevention Assemblies, when approved by the Program Administrator, shall be installed close to the system or appurtenance with the cross-connection potential (isolation).

D. The assembly must be protected from freezing and other severe weather conditions. However, the drain port and test cocks on the assembly shall not be obstructed in any way.

E. If written permission is granted by the Program Administrator to install the Backflow Prevention Assembly inside of the building, the assembly shall be readily accessible during standard office hours of 8:00 a.m. to 5:00 p.m., Monday through Friday.

F. If an assembly, with written permission, is installed inside the building and is 4" or larger and is installed 5' above the floor, it must be equipped with a rigid and permanently installed scaffolding meeting the requirements of the U.S. Occupational Safety and Health Administration and the Occupational Safety and Health Codes of the State of Texas.

G. All vertical installations must be approved in writing by the Program Administrator prior to installation.

H. The assembly/device shall be readily accessible with adequate room for maintenance and testing. Assemblies 2" and smaller shall have at least 6" clearance on all sides of the assembly. All assemblies larger than 2" shall have a minimum clearance of 12" on the back side, 24" on the test cock side, 12" below the assembly, and 36" above the assembly. "Y" pattern double check valve assemblies shall be installed so that the check valves are horizontal and the test cocks face upward (see MANUAL OF CROSS-CONNECTION CONTROL).

I. Reduced Pressure Principle (RP) assemblies are designed for above-ground installation, and may be installed in a vault only if specific approval is granted by the Program Administrator. If approval is granted, it will be under the following circumstances:

1. Relief valve discharge must be drained to daylight through a "bore sight" type drain. The drain shall be of adequate capacity to carry the full rated flow of assembly and shall be screened on both ends.

2. No standing water will be allowed in the vault. If the drain malfunctions, then the RP assembly must be installed above the ground elevation per the INSTALLATION STANDARDS (USC – "Manual of Cross-Connection Control").

J. An approved air gap shall be located at the relief valve orifice of RP assemblies. This air gap shall be at least twice the inside diameter of the incoming supply line as measured vertically above the top rim of the drain and in no case less than 1".

K. Upon completion of the installation, the Corporation shall be notified and all assemblies must be inspected and tested by a licensed Backflow Prevention Assembly Tester. All backflow prevention assemblies/devices must be registered with the Corporation.

Registration shall consist of: date of installation, make and model, serial number of the assembly/device, and initial test report.

L. All backflow prevention assemblies/devices shall be of a type and model approved by the Corporation.

PURCHASE OF ASSEMBLIES

The member/customer is responsible for the purchase and installation of the backflow prevention device. Regardless of who purchased or where the device was purchased, it must be tested upon installation. The backflow prevention assembly/device may be purchased at any location or outlet the member/customer chooses. However, the device must meet the standards set forth in the Texas Commission on Environmental Quality rules and regulations, the requirements set forth in this document, and the requirements of the EPA where applicable.

FEES AND PAYMENT

The person or entity that owns or rents the property on which the Backflow Prevention Assembly/Device, or Assemblies/Devices, must be installed shall be responsible for all costs associated with the installation, repair, inspection, testing, and maintenance of the assembly/Device(s). If the Assembly/Device is installed by a third party, such as a licensed plumber, the payment shall be made directly to the third party and Wimberley shall have no involvement.

SECTION 9. PROTECTION AGAINST CONTAMINATION AND POLLUTION FROM CROSS-CONNECTIONS AND POTENTIAL CROSS-CONNECTIONS

A. No water service connections to any premises or buildings shall be installed or maintained unless the potable water and water supply are protected at all times against actual or potential contamination or pollution in the manner required by this Cross-Connection Control Program.

B. In the event of an incident or situation occurring on the premises of the water customer or under the control of the water customer that poses a threat to or endangers the public water supply system, the water customer shall immediately notify the Corporation's Program Administrator and take steps to contain or mitigate the threat or danger to the water system of the Corporation.

CONTAINMENT PROGRAMS

A containment program is also known as a "premises isolation program". This type of program has a backflow prevention device located at the main water connection (the meter) for the facility. This type of program protects the water utility, but does not protect the population working or residing within the facility. Protection from internal cross-connections to health hazards is extremely important as they can be found in many facilities where there may be a large number of people working or residing.

In situations where containment backflow prevention is used, the customer must be aware of the hazard associated with thermal expansion. The backflow prevention device creates a "closed loop system". Therefore, it is important that the customer verify the operation of the T&P valve on their water heater.

INTERNAL CROSS-CONNECTION CONTROL PROGRAMS

An internal cross-connection control program is one that is located within a facility where an actual or potential contamination hazards may exist or may be connected to the internal potable water system. This type of program is strictly internal and should not be confused with the cross-connection control program that is administered by Wimberley Water Supply Corporation. The internal hazards and cross-connections should be identified during the Customer Service Inspection. The internal cross-connection control program should consist of backflow prevention at specific locations within a facility where hazards may be located. The internal cross-connection control program is very important since it is not only Wimberley Water Supply that is being protected but also the people within the facility. The challenge is the need to install and test more than one backflow prevention device or assembly.

The adequacy of an internal cross-connection control program is dependent on periodic Customer Service Inspections. Periodic Customer Service Inspections will help to identify any cross-connections that have been installed since the last visit and will help ensure existing cross-connections are still in place and tested. Therefore, an additional Customer Service Inspection may be required at any given time, based on reasons set forth in WWSC's Cross-Connection Control Program.

EXISTING BACKFLOW PREVENTION ASSEMBLIES/DEVICES

All existing backflow prevention assemblies/devices that do not meet the requirements of this Program, but were approved assemblies/devices at the time of installation, shall not be required to be upgraded to a currently approved model unless an inspection should reveal a malfunction that cannot be corrected, or if the assembly/device should malfunction prior to an inspection and the assembly/device cannot be properly repaired. All existing backflow prevention

assemblies/devices shall be required to undergo the appropriate test and inspection as outlined in this program.

SECTION 10. TESTING AND INSPECTION OF BACKFLOW PREVENTION ASSEMBLIES

INTRODUCTION

Assemblies used for protection of the potable water supply against health or non-health hazards (testable assemblies only), whether installed at the meter or part of an internal program, must be tested upon installation and at least once per year thereafter by a licensed backflow prevention assembly tester and the records must be retained by Wimberley Water Supply Corporation for at least three (3) years.

Like all mechanical devices, backflow prevention assemblies are subject to failure over time and must be tested to ensure that they are operating properly and are protecting the potable water supply.

In addition to recording the test results, the Test and Maintenance Report (T&M) form in Appendix C, which a licensed backflow prevention assembly tester must fill out and sign, requires that the licensed BPAT certify whether the installation of the assembly complies with manufacturer recommendations and local codes. The BPAT then forwards the signed original to the PWS, which is required to retain it.

Licensed BPATs are qualified to test and repair assemblies on any domestic, commercial, industrial, or irrigation service. There is an additional requirement for BPATs who test and repair assemblies on fire suppression systems or fire lines. BPATs may test an assembly on these systems only if they are permanently employed by an approved fire-line contractor.

TESTING REQUIREMENTS

The Program Administrator shall cause all Assemblies to be tested and inspected in each of the following circumstances:

A. Approved backflow prevention assemblies must be tested by a recognized Backflow Prevention Assembly Tester immediately after the Assembly has been installed or if it has been relocated, removed and reinstalled, or repaired. If the Assembly is installed on a fire protection line the inspector must be approved as a fire line tester.

B. All backflow prevention assemblies shall be tested at least once per year by a licensed tester that is properly registered with Wimberley Water Supply Corporation. The original test report shall be sent to the Wimberley WSC office for filing in the customer/member

account file. The test report shall be completed on the form provided by Wimberley WSC, no other forms will be allowed or accepted (see appendix).

C. Depending on the service conditions and potential degree of hazard, assemblies may be required to be tested more frequently if the Program Administrator deems necessary.

D. The owner or renter of the property shall have the responsibility for ensuring that assemblies are tested and inspected per the requirements of this program and the costs for these tests and inspections shall be borne by the property owner or renter.

PROCEDURES FOR TESTING AND INSPECTION

A. All assembly testing shall be performed by a licensed backflow prevention assembly tester who is a Tester licensed by the State of Texas. This Tester shall submit the original signed report to Wimberley Water Supply Corporation after testing and inspection has been successfully completed. The Tester shall keep a copy of this report for his/her records and a report copy shall be submitted to the property owner or tenant.

B. In addition to Annual or other Testing Requirements, all Backflow Prevention Assemblies must be TESTED upon: (1) Installation, (2) Repair, (3) Removal and Reinstallation.

C. The Corporation shall not be liable for any damage to any backflow prevention assembly that occurs during the installation or repair process or during the testing process.

The Corporation shall not be responsible or liable for loss of water service during the process of installation, repair, or testing of any backflow prevention assembly.

D. The methodology to be utilized by the Tester in the testing and inspection of all backflow prevention assemblies/devices shall be as outlined in the following: the latest edition of Manual of Cross-Connection Control, published by the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California (USC), Los Angeles, California 90089.

MAINTENANCE AND REPAIR OF ASSEMBLIES/DEVICES

A. A person or entity who owns, operates, or manages premises, or resides on such premises, shall maintain and repair the backflow prevention assemblies located on those premises. Maintenance and/or repair of these assemblies shall be accomplished by competent and qualified individuals.

B. A person or entity commits an offense if:

1. He/she fails to properly test, maintain, and/or repair backflow prevention assemblies/devices as required under this Program.

2. Backflow enters the WWSC public water system from premises he/she owns, resides within, operates, or manages.

C. It is the responsibility of the property owner or renter to eliminate the possibility of THERMAL EXPANSION, and if a closed system has been or will be created by the installation of a backflow prevention assembly, the installation of a Thermal Expansion Device is recommended by WWSC to the property owner or renter. The owner/renter shall pay the full cost for such installation.

D. The costs associated with the testing, maintenance, and repair of these assemblies shall be borne by the property owner or renter.

E. Any water pressure drop caused by the installation of a backflow prevention assembly is not the responsibility of the Corporation. Wimberley WSC will provide information, if available, concerning pressure in any area(s) of the Corporation, but the Wimberley WSC is neither liable nor responsible for application of this information.

SECTION 11. RESIDENTIAL AND NON-RESIDENTIAL SERVICE CONNECTIONS

A. Any residential property which has been determined to have an actual or potential cross-connection will be required to have the proper backflow device assembly installed in accordance with the Corporation's Cross-Connection Control Program.

B. Any non-residential property which has been determined to have an actual or potential cross-connection will be required to have the proper backflow prevention assembly installed in accordance with the Corporation's Cross-Connection Control Program.

C. The property owner or renter shall be responsible for the installation, maintenance, repair, and testing of all backflow prevention assemblies located on their property. When the tenants change, or if the plumbing is altered or increased in any way, it is the responsibility of the property owner to notify Wimberley Water Supply Corporation.

<u>FEES AND PAYMENT FOR BACKFLOW PREVENTION TESTING</u>

Wimberley Water Supply requires the member/customer to have the backflow prevention assembly tested at least annually.

Payment for testing a backflow prevention assembly:

- The member/customer hires a private Backflow Prevention Assembly Tester (BPAT) and pays for the test directly to the BPAT, and then the BPAT submits the test report to Wimberley Water Supply Corporation for filing.

SECTION 12. DISCONNECTION OF WATER SERVICE

A. The customer's water system shall be open for inspection at all reasonable times to authorized representatives of the Corporation to determine the existence of cross-connections or potential cross-connections, or if there are existing or potential sanitary or structural hazards, including violations of these regulations. When such conditions become known, the Corporation shall deny or immediately discontinue water service to the premises until the customer has corrected the condition(s) in conformance with the Corporation's Cross-Connection Control Program.

B. Water service may be denied, disconnected, and/or discontinued by the Corporation, under its Standard Disconnection Procedures, if one or more of the following conditions occurs:

1. Failure of the member/customer (property owner or renter) to have the assembly or assemblies tested/inspected within the appropriate time period.

2. Failure of the customer to install the Backflow Prevention Assembly, or Assemblies, as directed by the Corporation's Program Administrator.

3. Denial by the Member/Customer (Property Owner or Renter), to the Corporation's Program Administrator or designated employee of Wimberley Water Supply Corporation, to access the buildings and premises in which actual or potential cross-connections may exist.

4. Failure of the customer to allow an inspection of his/her property as regarding a Customer Service Inspection or cross-connection inspection or the failure of a customer to respond to a cross-connection survey or other questions relating to the actual or potential cross-connections on the property that is under the control of the customer.

5. Potential or actual situations whereas the Corporation's water supply system is under the threat of a backflow incident and whereas the General Manager (Program Administrator) shall have the authority to immediately disconnect the water service of the property posing the backflow threat.

C. Wimberley Water Supply Corporation shall submit prior notification to the customer before the disconnection of water service is initiated, unless the hazard is such that the Corporation's water system is placed in immediate jeopardy and in this case the water service will be terminated without delay and without notice.

SECTION 13. QUALIFICATIONS FOR CUSTOMER SERVICE INSPECTOR AND BACKFLOW PREVENTION ASSEMBLY TESTER

A. The Testing of Backflow Prevention Assemblies must be obtained via outside sources that are licensed by the State of Texas. A Backflow Prevention Assembly Tester (BPAT) is considered qualified to test Backflow Prevention Assemblies within the Corporation's service area in the following manner:

- Obtainment of BPAT License from the State of Texas
- Fulfillment of the responsibilities and requirements of Section 14 (as follows).

B. Customer Service Inspections shall be conducted by individuals holding a current Customer Service Inspector (CSI) license as issued by the Texas Commission on Environmental Quality, Water Supply Protection Specialist endorsement on a current plumbing license, or licensed plumbing inspector. Further, the inspector shall be properly registered with Wimberley Water Supply Corporation as a licensed inspector.

SECTION 14. RESPONSIBILITIES OF BACKFLOW PREVENTION ASSEMBLY TESTER

A. Each licensed backflow prevention assembly tester shall be responsible for performing competent and accurate tests and certifications of backflow prevention assemblies and devices and shall submit completed test reports to the Program Administrator as required.

B. Registered serial numbers from test gauges shall be listed on tests and maintenance reports that are to be submitted to Wimberley Water Supply Corporation. Annually, each recorded test kit shall be tested for accuracy and calibrated to maintain a plus or minus accuracy factor as indicated in the latest edition of the Manual of Cross-Connection Control.

C. Wimberley Water Supply Corporation assumes no responsibility for these Testers and shall not be liable for any actions of any Backflow Prevention Assembly Tester. Additionally, any business transactions between the property owner/renter and the Tester is solely the responsibility of these parties.

SECTION 15. INSTALLATION STANDARDS AND SPECIFICATIONS

The Installation Standards and Specifications for the following types of Backflow Prevention Assemblies are contained in the latest edition of the Manual of Cross-Connection Control, published by the Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California, Los Angeles, California 90089.

- Double Check Valve (DCV)
- Double Detector Check Valve (DDC)
- Atmospheric Vacuum Breaker (AVB)
- Pressure Vacuum Breaker (PVB)
- Hose Bibb Vacuum Breaker (HBVB)
- Reduced Pressure Principal (RP)
- Reduced Pressure Principle Detector Check (RPDC)

SECTION 16. ENFORCEMENT OF CROSS-CONNECTION CONTROL PROGRAM

A. The Program Administrator and other Employees of Wimberley Water Supply Corporation are hereby authorized by the Board of Directors of Wimberley Water Supply Corporation to enforce the provisions of this "Cross-Connection Control Program," as adopted under Resolution RES-34-2021.

B. The Program Administrator, Inspectors and other Employees of the Corporation charged with the enforcement of this Cross-Connection Control Program shall be deemed to be performing a function of Wimberley Water Supply Corporation for the benefit of the general public and the member/customers of the Corporation, in accordance with State Laws and Regulations, and neither the Corporation, the Board of Directors, the Program Administrator (General Manager), nor the other Employees of Wimberley Water Supply Corporation, while engaged in inspection or enforcement activities under this program and when acting in good faith and without malice, shall ever be held liable for any loss or damage, whether real or asserted, caused or alleged to be caused, as a result of the performance of such function.

SECTION 17. RECORD KEEPING

Wimberley Water Supply Corporation is required by TCEQ to maintain signed original records of all Customer Service Inspections and Backflow Prevention Device testing for a minimum of 3 years. Therefore, Wimberley Water Supply Corporation shall keep the original signed record on

file and additionally electronically scan the record and attach it to the member/customer's account file held within the secure domain of the billing software.

APPROVED UNDER RESOLUTION RES-34-2021

_____ _____

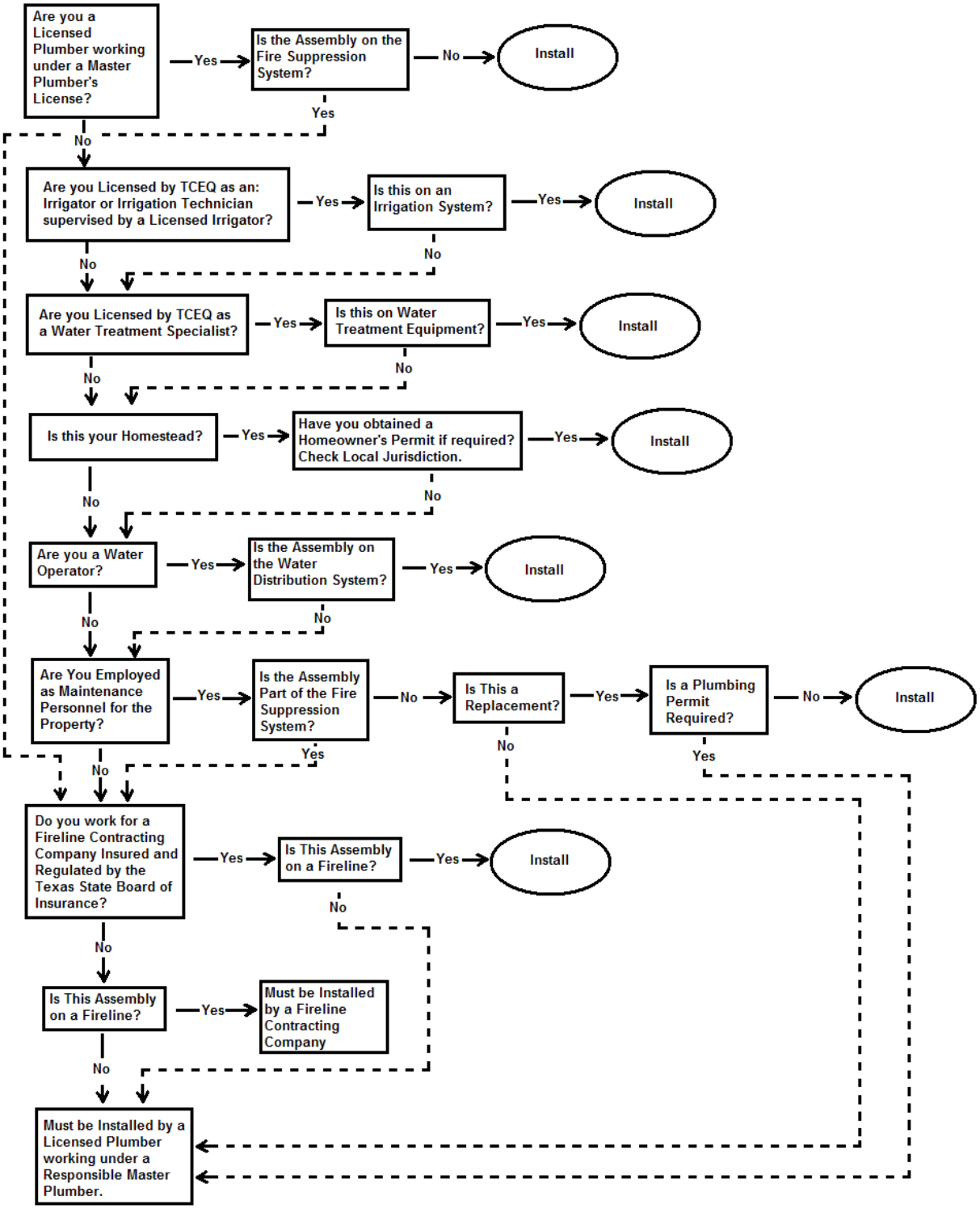
Paul Polhemus, Board President Steve Dunks, Secretary-Treasurer

APPENDIX

A

CAN I INSTALL A BACKFLOW PREVENTION DEVICE?

Appendix A: Can I Install a Backflow-Prevention Assembly?



APPENDIX

B

SERVICE AGREEMENT

APPENDIX

C

BACKFLOW PREVENTION ASSEMBLY TEST AND MAINTENANCE REPORT FORM

General Instructions:

The purpose of form TCEQ-20700 Backflow Prevention Assembly Test and Maintenance Report (T&M Form) is to document the results of testing a backflow prevention assembly. The form can be completed in one of two ways:

1. The form can be printed and completed by hand, or
2. The form can be completed electronically through an electronic medium (tablet, laptop computer, etc.). The yellow areas on the form can be completed electronically.

*NOTE: **The form is intended to be completed on-site while testing is occurring**. If the form is completed electronically, the electronic device must also be on-site for proper use of this form.*

The form must be printed and signed by the Licensed Tester that performed the work, unless TCEQ approved electronic recording keeping is in use. The hardcopy original must be provided to the Public Water System (PWS) as specified in ***Title 30 of the Texas Administrative Code 290.44(h)(4)(c).***

Specific Instructions:

Please follow the instructions below when completing form TCEQ-20700:

1. Check boxes: If completing the form electronically, all check boxes can be selected to make the desired indication. Selecting a box will insert an "X" in the box.
2. When performing the test, if the "Initial Test" yields acceptable results, do not complete the "Repairs and Materials Used**" or "Test After Repairs" rows on the form.
3. Remarks: If completing the form electronically, the "Remarks" section of the form is expandable, which means the final report can be more than one page. All pages of the T&M Report must be submitted to the water system.
4. Testing completed by a licensed tester must be documented on one form. Any follow-up testing performed by a different tester must be documented on a separate form.

Things to remember:

1. Differential pressure gauges:
    a. In order to prevent contamination, gauges used on potable water backflow prevention assemblies must **not** be used to test non-potable backflow prevention assemblies.
    b. Gauges need to be tested for accuracy annually and that date plus the serial number and other gauge information must be correctly recorded on the form. This allows Public water systems to ensure that the gauges are in compliance.
2. Annual testing of backflow prevention assemblies (those installed to protect against health hazards) or differential pressure gauges is to occur no more than 12 months from the last test date.
3. A tester's license is based on the testing procedures described in the University of Southern California's 10th edition manual. These procedures are expected to be used when testing backflow prevention assemblies.
4. Type II assemblies: This form can only accommodate a Type II assembly with a single check bypass.

Texas Commission on Environmental Quality

BACKFLOW PREVENTION ASSEMBLY TEST AND MAINTENANCE REPORT

The following form must be completed for each assembly tested. A signed and dated original must be submitted to the public water supplier for recordkeeping *purposes:

NAME OF PWS:	Wimberley Water Supply Corporation
PWS ID#:	1050018
PWS MAILING ADDRESS:	P.O. Box 10, Wimberley, TX 78676
PWS CONTACT PERSON:	Garrett Allen
ADDRESS OF SERVICE:	

The backflow prevention assembly detailed below has been tested and maintained as required by commission regulations and is certified to be operating within acceptable parameters.

TYPE OF BACKFLOW PREVENTION ASSEMBLY (BPA):				
☐	Reduced Pressure Principle (RPBA)	☐	Reduced Pressure Principle-Detector (RPBA-D)	Type II ☐
☐	Double Check Valve (DCVA)	☐	Double Check-Detector (DCVA-D)	Type II ☐
☐	Pressure Vacuum Breaker (PVB)	☐	Spill-Resistant Pressure Vacuum Breaker (SVB)	

Manufacturer:	Main:	Bypass:	Size:	Main:	Bypass:
Model Number:	Main:	Bypass:	BPA Location:		
Serial Number:	Main:	Bypass:	BPA Serves:		

Reason for test:	New ☐	Existing ☐	Replacement ☐	Old Model/Serial #		
Is the assembly installed in accordance with manufacturer recommendations and/or local codes?					☐ Yes	☐ No
Is the assembly installed on a non-potable water supply (auxiliary)?					☐ Yes	☐ No

TEST RESULT	Reduced Pressure Principle Assembly (RPBA)			Type II Assembly	PVB & SVB	
PASS ☐	DCVA		Relief Valve	Bypass Check	Air Inlet	Check Valve
FAIL ☐	1st Check	2nd Check***				
Initial Test Date: Time:	Held at ____ psid Closed Tight ☐ Leaked ☐	Held at ____ psid Closed Tight ☐ Leaked ☐	Opened at ____ psid Did not open ☐	Held at ____ psid Closed Tight ☐ Leaked ☐	Opened at ____ psid Did not open ☐ Did it fully open (Yes ☐ /No ☐)	Held at ____ psid Leaked ☐
Repairs and Materials Used**	Main: Bypass:					
Test After Repair Date: Time:	Held at ____ psid Closed Tight ☐	Held at ____ psid Closed Tight ☐	Opened at ____ psid	Held at ____ psid Closed Tight ☐	Opened at ____ psid	Held at ____ psid

*** 2nd check: numeric reading required for DCVA only

Differential pressure gauge used:		Potable: ☐		Non-Potable: ☐	
Make/Model:		SN:		Date tested for accuracy :	

Remarks:

Company Name:		Licensed Tester Name (Print/Type):	
Company Address:		Licensed Tester Name (Signature):	
Company Phone #:		BPAT License #	
		License Expiration Date:	

The above is certified to be true at the time of testing.

* TEST RECORDS MUST BE KEPT FOR AT LEAST THREE YEARS [30 TAC §290.46(B)]

** USE ONLY MANUFACTURER'S REPLACEMENT PARTS

APPENDIX

D

CUSTOMER SERVICE INSPECTION CERTIFICATE FORM

Texas Commission on Environmental Quality

Customer Service Inspection Certificate

Name of PWS:	Wimberley Water Supply Corporation
PWS ID #:	10050018
Location of Service:	

Reason for Inspection:	
New construction	☐
Existing service where contaminant hazards are suspected	☐
Material improvement, correction or expansion of distribution facilities	☐

I _____, upon inspection of the private water distribution facilities connected to the aforementioned public water supply do hereby certify that, to the best of my knowledge

Compliance	Non-Compliance		
☐	☐	(1)	No direct or indirect connection between the public drinking water supply and a potential source of contamination exists. Potential sources of contamination are isolated from the public water system by an air gap or an appropriate backflow prevention assembly in accordance with Commission regulations.
☐	☐	(2)	No cross-connection between the public drinking water supply and a private water system exists. Where an actual air gap is not maintained between the public water supply and a private water supply, an approved reduced pressure principle backflow prevention assembly is properly installed.
☐	☐	(3)	No connection exists which would allow the return of water used for condensing, cooling or industrial processes back to the public water supply.
☐	☐	(4)	No pipe or pipe fitting which contains more than 8.0% lead exists in private water distribution facilities installed on or after July 1, 1988 and prior to January 4, 2014.
☐	☐	(5)	Plumbing installed on or after January 4, 2014 bears the expected labeling indicating ≤0.25% lead content. If not properly labeled, please provide written comment.
☐	☐	(6)	No solder or flux which contains more than 0.2% lead exists in private water distribution facilities installed on or after July 1, 1988.

I further certify that the following materials were used in the installation of the private water distribution facilities:

Service lines:	Lead ☐	Copper ☐	PVC ☐	Other ☐ PEX
Solder:	Lead ☐	Lead Free ☐	Solvent Weld ☐	Other ☐
Remarks:				

I recognize that this document shall be retained by the aforementioned Public Water System for a minimum of ten years and that I am legally responsible for the validity of the information I have provided.

Signature of Inspector:		License Type:	Customer Service Inspection
Inspector Name(Print/Type):		License Number:	
Title of Inspector:	Inspector	Date / Time of Insp.:	/

A Customer Service Inspection Certificate should be on file for each connection in a public water system to document compliance with 30 TAC § 290.44(h)/290.46(j).

APPENDIX

E

RULES RELATED TO CROSS-CONNECTION CONTROL AND BACKFLOW PREVENTION

The following rules have been extracted from the TAC and reformatted for ease of use. In the case of any discrepancy between this guide and the rules published at the Texas Secretary of State's website , the SOS site shall apply.

§290.38. Definitions

The following words and terms, when used in this chapter shall have the following meanings, unless the context clearly indicates otherwise. If a word or term used in this chapter is not contained in the following list, its definition shall be as shown in Title 40 Code of Federal Regulations (CFR) §141.2. Other technical terms used shall have the meanings or definitions listed in the latest edition of The Drinking Water Dictionary, prepared by the American Water Works Association.

§290.38(2) Air gap—The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet conveying water to a tank, fixture, receptor, sink, or other assembly and the flood level rim of the receptacle. The vertical, physical separation must be at least twice the diameter of the water supply outlet, but never less than 1.0 inch. …

§290.38(16) Contamination—The presence of any foreign substance (organic, inorganic, radiological or biological) in water which tends to degrade its quality so as to constitute a health hazard or impair the usefulness of the water.

§290.38(17) Cross-connection—A physical connection between a public water system and either another supply of unknown or questionable quality, any source which may contain contaminating or polluting substances, or any source of water treated to a lesser degree in the treatment process.

§290.38(20) Disinfection—A process which inactivates pathogenic organisms in the water by chemical oxidants or equivalent agents.

§290.38(21) Distribution system—A system of pipes that conveys potable water from a treatment plant to the consumers. The term includes pump stations, ground and elevated storage tanks, potable water mains, and potable water service lines and all associated valves, fittings, and meters, but excludes potable water customer service lines.

§290.38(22) Drinking water—All water distributed by any agency or individual, public or private, for the purpose of human consumption or which may be used in the preparation of foods or beverages or for the cleaning of any utensil or article used in the course of preparation or consumption of food or beverages for human beings. The term "Drinking Water" shall also include TCEQ publication RG-478 Establishing and Managing an Effective Cross-Connection Control Program Revised August 2016 27 all water supplied for human consumption or used by any institution catering to the public.

§290.38(23) Drinking water standards—The commission rules covering drinking water standards in Subchapter F of this chapter (relating to Drinking Water Standards Governing Drinking Water Quality and Reporting Requirements for Public Water Systems). …

§290.38(31) Health hazard—A cross-connection, potential contamination hazard, or other situation involving any substance that can cause death, illness, spread of disease, or has a high probability of causing such effects if introduced into the potable drinking water supply.

§290.38(32) Human consumption—Uses by humans in which water can be ingested into or absorbed by the human body. Examples of these uses include, but are not limited to drinking, cooking, brushing teeth, bathing, washing hands, washing dishes, and preparing foods. …

§290.38(53) Nonhealth hazard—A cross-connection, potential contamination hazard, or other situation involving any substance that generally will not be a health hazard, but will constitute a nuisance, or be aesthetically objectionable, if introduced into the public water supply. …

§290.38(57) Plumbing inspector—Any person employed by a political subdivision for the purpose of inspecting plumbing work and installations in connection with health and safety laws and ordinances, who has no financial or advisory interest in any plumbing company, and who has successfully fulfilled the examinations and requirements of the Texas State Board of Plumbing Examiners.

§290.38(58) Plumbing ordinance—A set of rules governing plumbing practices which is at least as stringent and comprehensive as one of the following nationally recognized codes:

§290.38(58)(A) the International Plumbing Code

§290.38(59) Potable water customer service line—The sections of potable water pipe between the customer's meter and the customer’s point of use.

§290.38(60) Potable water service line—The section of pipe between the potable water main to the customer's side of the water meter. In cases where no customer water meter exists, it is the section of pipe that is under the ownership and control of the public water system. Establishing and Managing an Effective Cross-Connection Control Program TCEQ publication RG-478 28 Revised August 2016

§290.38(61) Potable water main—A pipe or enclosed constructed conveyance operated by a public water system which is used for the transmission or distribution of drinking water to a potable water service line.

§290.38(62) Potential contamination hazard—A condition which, by its location, piping or configuration, has a reasonable probability of being used incorrectly, through carelessness, ignorance, or negligence, to create or cause to be created a backflow condition by which

contamination can be introduced into the water supply. Examples of potential contamination hazards are:

§290.38(73) Service line—A pipe connecting the utility service provider's main and the water meter, or for wastewater, connecting the main and the point at which the customer's service line is connected, generally at the customer's property line.

§290.44. Water Distribution

§290.44(b) Lead ban. The following provisions apply to the use of lead in plumbing.

§290.44(b)(1) The use of pipes and pipe fittings that contain more than 0.25% lead or solders and flux that contains more than 0.2% lead is prohibited in the following circumstances:

§290.44(b)(1)(A) for installation or repair of any public water supply; and

§290.44(b)(1)(B) for installation or repair of any plumbing in a residential or nonresidential facility providing water for human consumption and connected to a public drinking water supply system.

§290.44(b)(2) This requirement will be waived for lead joints that are necessary for repairs to cast iron pipe.

§290.44(h) Backflow, siphonage.

§290.44(h)(1) No water connection from any public drinking water supply system shall be allowed to any residence or establishment where an actual or potential contamination hazard exists unless the public water facilities are protected from contamination.

§290.44(h)(1)(A) At any residence or establishment where an actual or potential contamination hazard exists, additional protection shall be required at the meter in the form of an air gap or backflow prevention assembly. The type of backflow prevention assembly required shall be determined by the specific potential hazard identified in

§290.44(h)(1)(B) At any residence or establishment where an actual or potential contamination hazard exists and an adequate internal crossconnection control program is in effect, backflow protection at the water service entrance or meter is not required. TCEQ publication RG-478 Establishing and Managing an Effective Cross-Connection Control Program Revised August 2016 31

§290.44(h)(1)(B)(i) An adequate internal cross-connection control program shall include an annual inspection and testing by a certified backflow prevention assembly tester on all backflow prevention assemblies used for health hazard protection.

§290.44(h)(1)(B)(ii) Copies of all such inspection and test reports must be obtained and kept on file by the water purveyor.

§290.44(h)(1)(B)(iii) It will be the responsibility of the water purveyor to ensure that these requirements are met.

§290.44(h)(2) No water connection from any public drinking water supply system shall be connected to any condensing, cooling, or industrial process or any other system of nonpotable usage over which the public water supply system officials do not have sanitary control, unless the said connection is made in accordance with the requirements of paragraph (1) of this subsection. Water from such systems cannot be returned to the potable water supply.

§290.44(h)(3) Overhead bulk water dispensing stations must be provided with an air gap between the filling outlet hose and the receiving tank to protect against back siphonage and cross-contamination.

§290.44(h)(4) All backflow prevention assemblies that are required according to this section and associated table located in §290.47(i) of this title shall be tested upon installation by a recognized backflow prevention assembly tester and certified to be operating within specifications. Backflow prevention assemblies which are installed to provide protection against health hazards must also be tested and certified to be operating within specifications at least annually by a recognized backflow prevention assembly tester.

§290.44(h)(4)(A) Recognized backflow prevention assembly testers shall have completed an executive director approved course on cross-connection control and backflow prevention assembly testing, pass an examination administered by the executive director, and hold a current license as a backflow prevention assembly tester.

§290.44(h)(4)(A)(i) Backflow prevention assembly testers are qualified to test and repair assemblies on any domestic, commercial, industrial, or irrigation service.

§290.44(h)(4)(A)(ii) Backflow prevention assembly testers may test and repair assemblies on fire lines only if they are permanently employed by an Approved Fireline Contractor. The State Fire Marshal's office requires that any person performing maintenance on fire lines must be employed by an Approved Fireline Contractor.

§290.44(h)(4)(B) Gauges used in the testing of backflow prevention assemblies shall be tested for accuracy annually in accordance with the University of Southern California's Manual of Cross-Connection Control or the American Water Works Association Recommended Practice for Backflow Establishing and Managing an Effective Cross-Connection Control Program TCEQ publication RG-478 32 Revised August 2016 Prevention and Cross-Connection Control (Manual M14). Public water systems shall require testers to include test gauge serial numbers on "Test and Maintenance" report forms and ensure testers have gauges tested for accuracy.

§290.44(h)(4)(C) A test report must be completed by the recognized backflow prevention assembly tester for each assembly tested. The signed and dated original must be submitted to the public water supplier for recordkeeping purposes. Any form which varies from the

format specified in commission Form No. 20700 must be approved by the executive director prior to being placed in use.

§290.44(h)(5) The use of a backflow prevention assembly at the service connection shall be considered as additional backflow protection and shall not negate the use of backflow protection on internal hazards as outlined and enforced by local plumbing codes.

§290.44(h)(6) At any residence or establishment where there is no actual or potential contamination hazard, a backflow prevention assembly is not required.

§290.44(j) If a structure is connected to a public water supply system and has a rainwater harvesting system, the structure must have appropriate cross-connection safeguards in accordance with subsection (h)(1) of this section.

§290.44(j)(1) A privately owned rainwater harvesting system with a capacity of more than 500 gallons that is connected to a public water system for a back-up supply shall have a backflow prevention assembly or an air gap installed at the storage facility for the harvested rainwater to ensure physical separation between the rainwater harvesting system and the public water system.

§290.44(j)(2) At each residence or facility where water from a rainwater harvesting system is used for potable purposes and there is a connection to a public water system, the public water system shall ensure that the rainwater harvesting system is installed and maintained by a master plumber or journeyman plumber licensed by the Texas State Board of Plumbing Examiners and who holds an endorsement issued by the Texas State Board of Plumbing Examiners as a Water Supply Protection Specialist. TCEQ publication RG-478 Establishing and Managing an Effective Cross-Connection Control Program Revised August 2016 33

§290.44(j)(3) A person who intends to connect a rainwater harvesting system to a public water system must give written notice of that intention to the municipality or the owner or operator of the public water system in which the rainwater harvesting system is located.

§290.44(j)(4) The public water system used as a back-up supply for the rainwater harvesting system may be connected only to the water storage tank and may not be connected to the plumbing of a structure.

§290.46. Minimum Acceptable Operating Practices for Public Drinking Water Systems

§290.46(i) Plumbing ordinance. Public water systems must adopt an adequate plumbing ordinance, regulations, or service agreement with provisions for proper enforcement to insure that neither cross-connections nor other unacceptable plumbing practices are permitted (See §290.47(b) of this title (relating to Appendices)). Should sanitary control of the distribution system not reside with the purveyor, the entity retaining sanitary control shall be responsible for establishing and enforcing adequate regulations in this regard. The use of pipes and pipe fittings that contain more than 0.25% lead or solders and flux that contain more than 0.2% lead is prohibited for installation or repair of any public water supply and for installation or repair of any plumbing in a residential or nonresidential

facility providing water for human consumption and connected to a public drinking water supply system. This requirement may be waived for lead joints that are necessary for repairs to cast iron pipe.

§290.46(j) Customer service inspections. A customer service inspection certificate shall be completed prior to providing continuous water service to new construction, on any existing service either when the water purveyor has reason to believe that cross-connections Establishing and Managing an Effective Cross-Connection Control Program TCEQ publication RG-478 34 Revised August 2016 or other potential contaminant hazards exist, or after any material improvement, correction, or addition to the private water distribution facilities. Any customer service inspection certificate form which varies from the format found in commission Form No. 20699 must be approved by the executive director prior to being placed in use.

§290.46(j)(1) Individuals with the following credentials shall be recognized as capable of conducting a customer service inspection certification.

§290.46(j)(1)(A) Plumbing Inspectors and Water Supply Protection Specialists licensed by the Texas State Board of Plumbing Examiners (TSBPE).

§290.46(j)(1)(B) Customer service inspectors who have completed a commission-approved course, passed an examination administered by the executive director, and hold current professional license as a customer service inspector.

§290.46(j)(2) As potential contaminant hazards are discovered, they shall be promptly eliminated to prevent possible contamination of the water supplied by the public water system. The existence of a health hazard, as identified in §290.47(i) of this title, shall be considered sufficient grounds for immediate termination of water service. Service can be restored only when the health hazard no longer exists, or until the health hazard has been isolated from the public water system in accordance with §290.44(h) of this title (relating to Water Distribution).

§290.46(j)(3) These customer service inspection requirements are not considered acceptable substitutes for and shall not apply to the sanitary control requirements stated in §290.102(a)(5) of this title (relating to General Applicability).

§290.46(k) Interconnection. No physical connection between the distribution system of a public drinking water supply and that of any other water supply shall be permitted unless the other water supply is of a safe, sanitary quality and the interconnection is approved by the executive director.

APPENDIX

F

TYPICAL HAZARDS

Typical hazards include but are not limited to the following:

- Services
    - Car washes
    - Laundry facilities – coin operated or commercial
    - Film developing
    - Steam generation
    - Water cooled equipment
    - Sewer connected plumbing fixtures that do not have an atmosphere vacuum break
    - Retention and mixing tanks
    - Recycled water systems
- Manufacturing
    - Reservoirs, cooling towers, chilled water, and circulating systems
    - Steam generating
    - Plating facilities and filtering equipment
    - Water cooled equipment
    - Industrial fluid systems
    - Sewer connected plumbing fixtures that do not have an atmospheric vacuum break
    - Firefighting systems
    - Hydraulically operated equipment where the potable water pressure is used directly and may be subject to back pressure
    - Sewer lines used for disposing of filter or softener backwash water, providing a quick drain of building potable water lines, or where potable water is used to blow out obstructions in lines.
    - Retention and mixing tanks
    - Oil and gas tanks and lines for testing, evacuating and hydraulic testing
    - Sand and gravel washing
    - Concrete batching or batch plants
    - Recycled water systems
- Food Processing and Preparation
    - Reservoirs, cooling towers, chilled water systems, and water circulating systems
    - Steam generating facilities and lines
    - Water cooled equipment

    - Firefighting systems
    - Auxiliary water supply
    - Steam connected facilities
    - Washing machines and dishwashers
    - Laboratory equipment
    - Retention and mixing tanks
    - Recycled water systems
- Medical Facilities
    - Laboratory equipment
    - Reservoirs, cooling towers, chilled water systems, circulating systems
    - Steam generating facilities and lines
    - Water cooled equipment
    - Sewer connected plumbing fixtures that do not have an atmospheric vacuum break
    - Firefighting equipment and systems
    - Auxiliary water systems
    - Steam connected facilities
    - Washing machines, dish washing equipment, autoclaves
    - De-ionized water systems
    - Film processing
    - Recycled water systems
- Petrochemical
    - Chemical processing
    - Tank cleaning
    - Petrochemical storage or disposal
    - Petrochemical by-products storage, processing, or disposal
    - Petroleum storage, processing, or disposal
    - Saltwater storage, processing, or disposal
- Restricted Services
    - Reservoirs, cooling towers, chilled water systems, circulating systems
    - Steam generating facilities
    - Irrigation systems
    - Recycled water systems

- Other Facilities
    - Boilers for saunas, steam baths, footbaths, etc.

- Beauty salons
- Lawn sprinkler systems or landscape irrigation systems
- Swimming Pools – home, commercial, public
- Fountains
- Livestock watering
- Carbonated beverage dispensers
- Commercial Ice Machines
- Janitorial sinks
- Recreational vehicle sewage dump station
- Reservoirs or water storage tanks
- Cooling towers, chilled water systems, circulating systems
- Steam generating equipment and lines
- Water cooled equipment
- Industrial fluid systems and lines
- Sewer connected plumbing fixtures that do not have an atmospheric vacuum break or air gap
- Firefighting systems
- Auxiliary water supplies such as water wells or interconnection with another water supply
- Recycled water systems (such as but not limited to aerobic on-site waste disposal systems)
- Chemical mixing
- Portable tank filling
- Water softener or water filtration system(s)

APPENDIX

G

RULES FOR LICENSING CUSTOMER SERVICE INSPECTIORS, BACKFLOW PREVENTION ASSEMBLY TESTERS, AND LANDSCAPE IRRIGATIORS

Rules for Licensing CSI Inspectors, BPATs, and Landscape Irrigators

The following rules have been extracted from the TAC and reformatted for ease of use. In the case of any discrepancy between this guide and the rules published at the Texas Secretary of State's website , the SOS site shall apply.

Licensing Requirements for Backflow Prevention Assembly Testers (from 30 TAC Chapter 30, Subchapter B)

§30.51 Purpose and Applicability

§30.51(a) The purpose of this subchapter is to establish qualifications for issuing and renewing licenses to an individual who tests and repairs backflow prevention assemblies.

§30.51(b) An individual who tests and repairs backflow prevention assemblies must meet the qualifications of this subchapter and be licensed according to Subchapter A of this chapter (relating to Administration of Occupational Licenses and Registrations).

§30.57 Definitions The following word and term, when used in this subchapter, shall have the following meaning, unless the context clearly indicates otherwise. Backflow prevention assembly tester (BPAT)—An individual who tests and repairs backflow prevention assemblies.

§30.60 Qualifications for Initial License To obtain a license, an individual must have:

§30.60(1) met the requirements in Subchapter A of this chapter (relating to Administration of Occupational Licenses and Registrations);

§30.60(2) passed an examination;

§30.60(3) received a high school diploma or equivalent certificate;

§30.60(4) completed an approved 40-hour backflow prevention assembly testing training course; and

§30.60(5) worked at least two years in an approved area which includes, but is not limited to:

§30.60(5)(A) operating or maintaining a public drinking water system;

§30.60(5)(B) installing or repairing residential, commercial, or industrial drinking water treatment equipment; Establishing and Managing an Effective Cross-Connection Control Program TCEQ publication RG-478 38 Revised August 2016

§30.60(5)(C) installing or repairing lawn irrigation systems;

§30.60(5)(D) performing activities requiring a master or journeyman plumbing license;

§30.60(5)(E) installing or servicing fire suppression sprinkler systems and lines;

§30.60(5)(F) operating or maintaining a domestic wastewater treatment facility;

§30.60(5)(G) performing health inspections that requires a registered sanitarian; or

§30.60(5)(H) performing other duties approved by the executive director.

§30.60(6) An individual may substitute one year of the required experience with:

§30.60(6)(A) one year of college credit (32 semester hours); or

§30.60(6)(B) 20 hours of approved training in addition to the required 40-hour backflow prevention assembly testing training course.

§30.62 Qualifications for License Renewal To renew a license, an individual must have:

§30.62(1) met the requirements in Subchapter A of this chapter (relating to Administration of Occupational Licenses and Registrations); and

§30.62(2) completed 24 hours of approved continuing education which includes eight hours of approved practical skills training.

Licensing Requirements for Customer-Service Inspectors (from 30 TAC Chapter 30, Subchapter C)

§30.81 Purpose and Applicability

§30.81(a) The purpose of this subchapter is to establish qualifications for issuing and renewing licenses to individuals who conduct and certify customer service inspections.

§30.81(b) An individual who performs customer service inspections must meet the qualifications of this subchapter and be licensed according to Subchapter A of this chapter (relating to Administration of Occupational Licenses and Registrations).

§30.81(c) An endorsement for customer service inspections shall expire when an individual renews a water operator's license or the license expires. To obtain a customer service inspector license, an individual holding an endorsement must submit a new application with the appropriate fee. TCEQ publication RG-478 Establishing and Managing an Effective Cross-Connection Control Program Revised August 2016 39

§30.81(d) A licensed customer service inspector shall not perform plumbing inspections required under Plumbing Licensing Law 15(a) (Texas Civil Statutes, Volume 17-1/2, Article 6243-101). §30.87 Definitions The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise.

§30.87 Definitions

§30.87(1) Cross-connection—A physical connection between a public water system and either another supply of unknown or questionable quality, any source which may contain contaminating or polluting substances, or any source of water treated to a lesser degree in the treatment process.

§30.87(2) Customer service inspection—An examination of the private water distribution facility for the purpose of providing or denying water service. The inspection is limited to the identification and prevention of cross-connections, potential contaminant hazards, and illegal lead materials. Customer service inspections are completed before providing continuous water service to new construction, on any existing service where there is reason to believe that cross-connections or other potential contaminant hazards exist, or after any material improvement, correction, or addition to private water distribution facilities (see §290.46(j) of this title (relating to Minimum Acceptable Operating Practices for Public Drinking Water Systems)).

§30.87(3) Customer service inspector—The person who is licensed by the executive director to perform customer service inspections.

§30.90 Qualifications for Initial License

§30.90(a) To obtain a license, an individual must have:

§30.90(a)(1) met the requirements in Subchapter A of this chapter (relating to Administration of Occupational Licenses and Registrations);

§30.90(a)(2) received a high school diploma or equivalent certificate;

§30.90(a)(3) completed an approved customer service inspector training course;

§30.90(a)(4) worked at least two years in an approved area which includes, but is not limited to:

§30.90(a)(4)(A) operation or maintenance of a public drinking water treatment or distribution system;

§30.90(a)(4)(B) performing activities requiring a master or journeyman plumbing license;

§30.90(a)(4)(C) conducting building or construction inspections; or Establishing and Managing an Effective Cross-Connection Control Program TCEQ publication RG-478 40 Revised August 2016

§30.90(a)(4)(D) performing duties related to this profession approved by the executive director.

§30.90(b) One year of college (32 semester hours) or an additional 20 hours of training credits may be substituted for one year of the experience requirement.

§30.92 Qualifications for License Renewal To renew a license, an individual must have:

§30.92(1) met the requirements in Subchapter A of this chapter (relating to Administration of Occupational Licenses and Registrations); and

§30.92(2) completed 16 hours of approved continuing education.

§30.95 Exemptions: Plumbing inspectors and water supply protection specialists licensed by the State Board of Plumbing Examiners are exempt from these requirements.