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## CHAPTER 5

### Recycled Nonpotable Water

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## Chapter 5

### Recycled Nonpotable Water

#### 5.01 Recycled Water within a Car Wash Facility

All on-site recycled water piping shall be manufactured and installed in accordance with the Uniform Plumbing Code, Appendix J and all governing codes, rules and regulations set forth by Regional Building Department and the City of Colorado Springs. All piping shall be continuously and permanently marked with the manufacturer's name or trademark, nominal size and schedule or class indicating the pressure rating. There shall be no connection between recycled water systems and the potable water system without the necessary backflow connection device. To be read in conjunction with City Code Chapter 12.4.12 - Cross Connection Control.

Recycled water systems shall be completely separate from the potable water system; there shall be no connection between recycled water systems and the potable water system without the necessary backflow connection device. External area drains or catch basins exposed to the environment shall be connected to the storm drainage system, only internal drains (covered) are permitted to connect to the Colorado Springs Utilities sanitary sewer system.

A recycled Car Wash facility shall include, in most cases to the following items:

- (a) **(Internal)** Catch Basin/Trough drain, grated: should be constructed at a minimum depth of three (3') feet deep (to prevent freezing of the pipes) and shall connect into a preliminary Sand/Oil Interceptor. (Outlet pipe to be located a minimum of three (3") inches above floor of catch basin floor). The minimum slope and cover for all pipes/drains shall be per Colorado Springs Utilities specifications. The minimum size for a drainpipe shall be four (4") inch diameter @ a grade of 2.08% or six (6") inch diameter @ a grade of 1.04%.
- (b) The preliminary Sand/Oil Interceptor approved by Colorado Springs Utilities (that may including a sand filter for filtration of particles) shall be sized to accommodate the capacity of the entire car washing facility and shall feed into a reclaim tank (s).
- (c) Recycled Tank(s) shall recycle the water and shall include the following internal fitting: Filtration System, pressure switch, fresh water connection for final rinse, pressure washer, control panel, High level alarm, pump off switch, be connected to a Backwater Valve downstream of recycled tank(s) before a sanitary sewer service line connection.

**NOTE:** A Backwater Valve shall be installed to prevent any contamination of the reclaim tank(s) recycled water. Recycle water piping shall be installed to a minimum of five (5') and a maximum of six (6') feet (to top of pipe) in depth to prevent freezing, per Colorado Springs Utilities Wastewater Line Extension and Service Standards.

**General** – The purpose of this specification is to provide information for the design, layout and construction of Backflow Prevention Devices that will meet the requirements for access, cleaning, and repair.

1. Fixture Branches. Backwater valves may be installed in the branches of the building sanitary sewer service lines, which are below grade.
  2. Diameter. Backwater valves, when fully opened, shall have a capacity at least that of the pipes in which they are installed.
  3. Location. Backwater valves shall be installed to be accessible for maintenance.
  4. All backwater valves shall conform to ASME/ANSI A 112.14.1-1975, IAPMO PS 38-99.
  5. Backwater valves shall have all bearing parts of corrosion resistant material.
  6. Use for gravity flow only, not for pressurized applications.
- (d) (If required by Colorado Springs Utilities) A Secondary Sand/Oil Interceptor shall be sized for the car-wash facility per Colorado Springs Utilities specifications, to accommodate by-pass lines, separate systems etc.  
(Reference: Wastewater Construction Drawing – C 2-7 Typical Sand & Oil Interceptor for Automotive Application.)
- (e) Connection to Colorado Springs Utilities main sanitary sewer line.
- (f) Location of all Sand/Oil Interceptors and its outfall location shall be shown on the approved construction or utility service plans approved by Colorado Springs Utilities. (Plumbing plans may be requested by Colorado Springs Utilities to be attached to the approved construction or utility service plans for inspection of piping and record purposes)
- (g) Colorado Springs Utilities does not permit valves within its wastewater system. If a standard “plug valve” is required to be installed, it shall be on a case-by-case basis with the approval of Colorado Springs Utilities.

Exception to the design criteria described above shall be with the approval of Colorado Springs Utilities on a case-by-case basis.

## 5.02 Inspection

Authorized representatives of Regional Building Department/Colorado Springs Utilities shall monitor and inspect the entire recycled water system including both On-site and off-site facilities. Regional Building Department /Colorado Springs Utilities shall conduct monitoring programs, maintain a record as deemed necessary, and provide reports as requested by regulatory agencies. The authorized representatives of Regional Building Department/Colorado Springs Utilities, in carrying out these functions, shall have the right to enter the customer’s premises during reasonable hours, for the purpose of

inspecting On-site recycled water facilities and areas of recycled water use and to ensure compliance with these Rules and Regulations. This includes the provision that runoff shall be controlled and limited, and that cross-connections between potable water facilities and recycled water facilities will not occur.

### **5.03 Pipe Material and Identification**

Recycled water piping and fittings shall be as required in the Uniform Plumbing Code for potable water piping and fittings. All recycled water pipe and fittings shall be continuously wrapped with purple-colored Mylar tape. The wrapping tape shall have a minimum nominal thickness of five ten-thousandths (0.0005) inches and a minimum width of two (2") inches. Tape shall be fabricated of polyvinyl chloride with a synthetic rubber adhesive and a clear polypropylene protective coating or approved equal. The tape shall be purple in color (Pantone color #512) and shall be imprinted in nominal one-half (1/2) inch high, black, uppercase letters, with the words **"CAUTION: RECYCLED WATER, DO NOT DRINK"**. The lettering shall be imprinted in two (2) parallel lines, such that after wrapping the pipe with a one-half (1/2) width overlap, one (1) full line of text shall be visible. Wrapping tape is not required for buried PVC pipe manufactured with purple color integral to the plastic and marked on opposite sides to read **"CAUTION: RECYCLED WATER, DO NOT DRINK"** in intervals not to exceed three (3') feet. All new common areas where recycled water is used and that are accessible to the general public shall be posted with conspicuous signs that include the following wording in a size no less than four (4") inches high by eight (8") inches wide: **"RECYCLED WATER - DO NOT DRINK " or " RECYCLED WATER - DO NOT DRINK "**.

All valves, except fixture supply control valves, shall be equipped with a locking feature. All mechanical equipment, which is appurtenant to the recycled water system, shall be painted purple to match the Mylar wrapping tape.

### **5.04 Installation**

Recycled water pipes shall be installed in accordance with the Uniform Plumbing Code, Appendix J and all governing codes, rules and regulations set down by Regional Building Department and the City of Colorado Springs. Recycled water pipes shall not be run or laid in the same trench as potable water pipes. A ten (10') foot horizontal separation shall be maintained between pressurized buried recycled and potable water piping. Buried potable water pipes crossing pressurized recycled water pipes shall be laid a minimum of eighteen (18") inches above the recycled water pipes. Recycled water pipes laid in the same trench or crossing building sewer or drainage piping shall be installed in compliance with Sections 609.0 and 720.0 of the Uniform Plumbing Code. Recycled water pipes shall be protected similar to potable water pipes.

### **5.05 Warning Labels (Tags)**

Colorado Springs Utilities may require warning labels, as approved by Colorado Springs Utilities, to be installed on designated facilities such as on controller panels and wash down or blow-off hydrants on water trucks and temporary construction services

where designated by Colorado Springs Utilities or Inspector. The labels will notify that the system contains recycled water that is unsafe to drink.

All recycled water sprinkler control valves, strainers, pressure regulator, isolation valves shall be tagged with identification tags.

- (a) Tags shall be weatherproof plastic, 3" x 4", purple in color with the words: **"WARNING -RECYCLED WATER - DO NOT DRINK"** or **"CAUTION – RECYCLED WATER FACILITY"** imprinted on one side. Imprinting shall be permanent and be black or white in color.
- (b) One tag shall be attached to each appurtenance as follows:
  - 1. Attach to valve stem directly or with plastic tie wrap or
  - 2. Attach to solenoid wire directly or with plastic tie wrap or
  - 3. Attach to valve cover with existing valve cover bolt.
  - 4. Attach to the body of the relative appurtenance with a plastic tie-wrap.

## 5.06 Valves

Valves used in recycled water systems shall conform to the following:

- (a) All valves, manual control valves, electrical control valves, pressure reducing valves and strainers for on-site recycled water systems shall be installed below grade in a valve box. All appurtenances shall be tagged as described below. Valves shall be constructed of brass with a purple rubber or vinyl cover or painted with purple paint to indicate that nonpotable water is being used.
- (b) The cover shall have a warning with the following information:  
**"NONPOTABLE" or "RECYCLED WATER", "DO NOT DRINK",  
"CAUTION – RECYCLED WATER FACILITY"**
- (c) The warning shall be permanently stamped or molded into the cover.
- (d) Locking covers may be required, per Regional Building Department/Colorado Springs Utilities representative.
- (e) Electrical and manual control valve boxes shall have a warning label permanently molded into or affixed onto the lid with rivets, bolts, etc. Warning labels shall be constructed of a purple weatherproof material with the warning permanently stamped or molded into the label. The warning shall contain the following information:  
**"NONPOTABLE" or "RECYCLED WATER", "DO NOT DRINK",  
"CAUTION – RECYCLED WATER FACILITY"**

## 5.07 Construction Dust Control

The uses of nonpotable water for the use of dust control shall only be conducted when approved by the Colorado Springs Utilities and CDPHE (Notice of Authorization, outlined in Chapter 1 of these Nonpotable Line Extension & Service Standards). The Contractor shall furnish and operate an approved sprinkler, equipped with positive and rapidly working cut-off valves and approved spray bars to insure the distribution of nonpotable water in a uniform and controllable rate of application over the entire width sprinkled. The Contractor shall apply the nonpotable water in the quantity specified on the drawings or as directed by Colorado Springs Utilities or the controlling authority, and conform to AWWA Manual M24, Dual Water Systems.

It shall be the Contractor's continuous responsibility at all times, (including nights, holidays and weekends) until the completion of the project, to maintain the specified areas relatively free of dust in a manner that will cause the least inconvenience to the public.

Dust control permit shall include but not limited to the following:

- (a) Proper nonpotable water signage at use areas, including signs on tank trucks and other equipment used for storage or distribution of nonpotable water.
- (b) Proper color-coding/marketing of all nonpotable piping, valves, outlets, fixtures, and other appurtenances.
- (c) When wetting down or pre-watering work surfaces to minimize the off-property transport of airborne particulate matter from activities such as construction or grading, and for use as dust control, application rates shall minimize any ponding on or runoff from the area approved for application or use.
- (d) If nonpotable water is to be used for soil compaction, an application rate must be used that prevents ponding or runoff from the area approved for application or use.
- (e) Records of nonpotable water usage must be kept.
- (f) A backflow prevention device or air gap must be provided when filling tank trucks with nonpotable water from the nonpotable water hydrant. This backflow prevention device or air gap must meet current Colorado Springs Utilities' Standards. Reference Nonpotable Water detail NP 1-16.
- (g) All nonpotable water tank trucks, hoses, nonpotable meter, and backflow devices must be dedicated only for use on the nonpotable water system.
- (h) To ensure adequate system operation, a two (2") inch nonpotable meter or smaller must be used at the nonpotable water hydrant connection.
- (i) When connected to the nonpotable water hydrant (with the approval of Colorado Springs Utilities), valves must be opened and closed slowly to ensure the system/pumps adjust properly.
- (j) Nonpotable water rates, as described in Colorado Springs Utilities' tariffs located on Colorado Springs Utilities web site.
- (k) Any release of recycled water to waters of the State (including groundwater, surface water, and the storm drain system) is considered a violation of Regulation No. 84. The contractor is to ensure that releases of recycled water do not occur either through filling operations or the use of the nonpotable water for construction activities.

## 5.08 Industrial Uses

### Cooling Tower.

Cooling-water make-up shall conform to these Nonpotable Water standards as outlined in Chapter 1 – General Information and AWWA Manual M24, Dual Water Systems.

All cooling towers shall discharge into a sanitary sewer line (with the approval of Colorado Springs Utilities). **The minimum size for a cooling tower discharge shall be calculated based on a restricted discharge of water of one hundred (100) gallons per minute** entering the sanitary sewer line. A detail drawing of the proposed outlet/drainage design to be shown on the approved construction or service plans, also show the location/connection to sanitary sewer line, in addition to the note below.

**NOTE TO BE ADDED TO ALL DRAWINGS THAT HAS A COOLING TOWER FACILITY (INTERNAL OR EXTERNAL)**

**The minimum size for a cooling tower discharge trap shall be calculated based on a restricted discharge of water of one hundred (100) gallons per minute entering the sanitary sewer line.**