

CITY OF SANTA BARBARA RECYCLED WATER PROJECT
STATE OF CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SPECIFICATIONS FOR
AREA MODIFICATIONS FOR RECYCLED WATER USE

PART I DESCRIPTION OF WORK

The extent of the work described in these specifications pertains to two types of modifications:

- 1) The **CONVERSION** of landscape irrigation equipment from an existing potable water source to a recycled water source. ALL of the following specifications apply to converted systems, as indicated by a “**C**” in the left-hand column;
- 2) The installation of completely **NEW** recycled water landscape irrigation systems. Only the following paragraphs indicated by an “**N**” in the left-hand column apply the new systems.

The work generally, but not completely, entails the following primary steps:

- (C) A. Disconnecting from the potable supply and reconnecting to an existing service and meter on the recycled water line in a nearby location
- (N, C) B. Placing approved reduced pressure principle backflow prevention devices on any potable service lines which have been approved to remain in use. Devices are to be located as close as practical to the meter or as directed and approved by the Water Reclamation Inspector.
- (C) C. Testing to verify that no cross-connections exist between the potable and recycled systems.
- (N, C) D. Painting picnic tables, if any, with a cleanable surface.
- (N, C) E. Posting of warning signs in locations approved by the Water Reclamation Inspector.
- (N, C) F. Sheltering drinking fountains, if any, (or removing existing fountain and constructing new drinking fountain) away from windblown irrigation spray.
- (C) G. Removing hose bibs, if any, on existing irrigation system and replace with approved quick-couplers.
- (N, C) H. Installation of vacuum breakers on all potable water hose bibs.

PART II PRODUCTS

Materials

- (C) Existing materials will not have to be replaced with the materials specified below.
- (N, C) All new materials shall be new and in an acceptable working condition and comply to the specifications as listed below.
- (N, C) Pressure Pipe: Comply with the following:
- (N, C) Galvanized Steel Pipe and Fittings, ANSI/ASTM A-120, Schedule 40.
- (N, C) Plastic Pipe and Fittings, ASTM D1785-74 and CS-207-60 Polyvinyl Chloride (PVC) violet colored pipe marked continuously with the wording "CAUTION RECYCLED WATER", Schedule 40 for sizes 3 inches and smaller or Class 315 for 4 inches and larger. Class 200 may be used for non-continuously pressurized pipe (laterals) 2-1/2 inches and smaller. (*Violet pipe is available from Coastal Pipco, Oxnard, (805) 642-4119, or Smith Pipe and Supply, Oxnard, (805) 485-5460.*)
- (N, C) Backflow Prevention Devices: Shall be reduced pressure principle device with California Department of Health Services' approval and shall be a USC Foundation approved device. Devices shall be equipped with double shutoff valves and manufactured by Febco. Febco's Model 825 or 825Y shall be used, or an equivalent model, and approved by the City Cross-Connection Inspector. Provide a galvanized 3/16 inch general-purpose carbon shell chain, lock and keys to secure the valve handles on units 4 inches and larger.
- (N, C) Buried Line Warning and Detectable Tape: Shall be minimum 5.5 mil composition film containing metalized layer laminated between two layers of inert plastic. Tape to contain the continuous message "CAUTION RECYCLED WATER LINE BURIED BELOW"; three-inch minimum width. Use with all buried pipe and place 6 inches above piping.
- (N, C) Sealant for Picnic Tables and Drinking Fountain Enclosure: Shall be Industrial Enamel VOC Complying B54 WZ 101 Series as manufactured by Sherwin Williams, Product Data E110 W or Approve sealant. All surfaces to be painted shall be cleaned per the manufacturer's directions. Only the eating and seating surfaces on picnic tables shall be painted.
- (N, C) Water Meters: Shall be of a type approved by the City Santa Barbara Public Works Department and shall meet AWWA Standards for class 1 meters.
- (N, C) Warning Signs and Warning Tags: Will be furnished by the City of Santa Barbara, or approved by the Water Reclamation Inspector.
- (N, C) Meters Scheduled for Removal: Shall be returned to the City of Santa Barbara Public Works Department.
- (N, C) Quick-Couplers: Shall be Nelson Model 7644 or 7645 or a Unit approved by the City Cross-Connection Inspector.

RWQCB Specifications

PART III EXECUTION

Trenching and Backfilling

(N, C) General: Excavate straight and true with bottom uniformly sloped to low points.

(N, C) Separation:

There shall be at least a 10-foot horizontal and 1-foot vertical separation between all pipelines transporting recycled water and those transporting potable water. The potable water pipeline shall be placed above the recycled water pipeline, in accordance with the Department of Health Services' "Criteria for the Separating of Water Mains and Sanitary Sewer," where recycled water is considered sewage (attached).

There shall be at least a 10-foot horizontal and 1-foot vertical separation between all pipelines transporting recycled water and those transporting sewage. The recycled water pipeline shall be placed above the sewer pipeline, in accordance with the Department of Health Services' "Criteria for the Separating of Water Mains and Sanitary Sewer," where recycled water is considered to be potable water (attached).

(N, C) Trench Depth: Excavate trenches to a depth of 3 inches below invert of pipe. Pipe invert shall be at a minimum depth of 15 inches.

(N, C) Backfill: Backfill with clean material. Remove organic material as well as rocks and debris larger than 1 inch in diameter. Place acceptable backfill material in 6 inch lifts, compacting each lift.

Testing

(N, C) General: Notify the Water Reclamation Inspector, in writing 48 hours in advance of when testing will be conducted. Tests shall be conducted in the presence of the Water Reclamation Inspector to obtain final approval.

(N, C) Hydrostatic Test: Flush and test water piping and valves before backfilling trenches to a hydrostatic pressure of not less than 60 psi. Repair all leaks when glued joints have cured at least 24 hours. Piping may be tested in sections to expedite work. Remove and repair piping, connections and valves which do not pass hydrostatic testing. Pressure loss not to exceed 5 psi in two hours. Repair all leaks.

(N, C) Cross-Connection Testing: Test the potable water system and recycled water irrigation system to verify that no cross-connections exist. Testing shall be performed as follows with assistance from the site maintenance supervisor:

- a. Turn off all recycled water service at the meters serving the site.
- b. Manually actuate all zone valves.
- c. Operation of any sprinklers is an indication that an unallowable cross-connection exists.

In the event that a cross-connection does exist, the cross-connection shall be disconnected and the lines capped. It shall be verified that the potable water system and recycled water system operate independently. The Water Reclamation Inspector and/or City Cross-Connection Inspector will decide when all cross-connection testing is complete.

- (N, C) Backflow Testing: Testing shall be performed by a certified backflow tester certified through the County of Santa Barbara, County of Ventura, or the American Water Works Association.

Record Drawings

- (N, C) Record Drawings shall be provided to the Water Reclamation Inspector showing locations and sizes of piping, valves, quick-couplers, and any other related installations.