

# **Recycled Water Landscape Irrigation User's Manual**



**City of Poway**

**May 1998**

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# Foreword

This Recycled Water User's Manual has been compiled through the efforts of public and private sector purveyors, consultants, and State of California and County of San Diego health officials for users of the City of Poway Recycled Water Distribution System. Although the majority of this manual is generic for the use of recycled water within California, users outside of the City of Poway or outside of San Diego County in general may be faced with slightly different regulations.

Within the City of Poway, various users or individual sites may have specific requirements for that site only. These specifics are outlined in the individual User's Permits and specified in the Site-Specific Details section. This section is tailored to each specific site for which an approved User's Permit has been issued and should not be considered as an approved variance for any other site. Any questions regarding the approved use of recycled water within any specific site should be addressed to the recycled water purveyor.

# Section 1

## Introduction

### 1.1 Purpose

The purpose of this manual is to offer the user of a recycled water system a resource for the day-to-day operation and control of that system. This manual is designed specifically to give the user information necessary to be in compliance with existing regulations for the operation of his recycled water system. Every effort has been made to ensure that this manual is in compliance with existing codes, laws, statutes, and regulations of the State of California, regulatory agencies, City of Poway Rules and Regulations, and local governing bodies pertaining to the currently approved use of recycled water. This manual is not intended to supersede any existing codes, laws, statutes, regulations (or AWWA California-Nevada Sections “Guidelines for Distribution of Nonpotable Water”) pertaining to the use of recycled water. Since codes, laws, statutes, and regulations can change without the express approval or knowledge of the City, the City assumes no liability for errors in this manual. It is the responsibility of the user to check with the permitting agency prior to initiating any operational or physical changes to his system.

### 1.2 Purpose and Definition of Recycled Water

Life cannot be maintained without an adequate supply of potable water. Supplies of potable water are dwindling, yet demand is increasing. During years of drought, this problem becomes even more acute. One solution is to satisfy nonpotable demands with recycled water. The reclaiming of water for nonpotable demands allows the potable water supply to be used for its primary function—human consumption.

Recycled water is a tertiary treated water, whose origin is the City of San Diego North City Water Reclamation Plant, treated to comply with California Code of Regulations, Title 22, Chapter 3. It is colorless and odorless and is allowable for human contact but not for human consumption. The sensible use of recycled water affords an excellent choice for nonpotable applications. Properly managed, recycled water is safe to use with a very limited health hazard, acknowledging that cross-connection with a potable water system is strictly prohibited.

### 1.3 User’s Summary

This summary is intended to be a brief overview of the contents of this document. Additional information on any point can be obtained by referring to the indicated reference point in this manual, or contact the City of Poway. It is recommended that the entire document be reviewed in depth and understood before operating your recycled water system.

- Recycled water shall be made available to any approved applicant for currently approved uses (Section 2.5).
- The user is responsible for the design, operation, and compliance of his or her recycled water system (Section 2.4).
- Recycled water will be used only in approved areas for approved uses by approved users (Section 2.7 and 2.8).
- A step-by-step summary for applying for recycled water service is included in Section 5.3.
- All recycled water systems will require periodic inspections **and have a designated Recycled Water Supervisor** to act as liaison with the City (Sections 3.5 and 3.7).
- All maintenance personnel must be trained in the operation and maintenance of recycled water (Section 3.7).
- Maintenance must be performed in a manner that assures that the recycled water system is in compliance with all current codes, laws, regulations, and statutes pertaining to the operation of a recycled water system (Section 3.9).
- Hours of operation are normally during periods of minimal public use, 10 p.m. to 6 a.m. (Section 3.8).
- Emergency situations, such as unauthorized discharge or contamination of the potable system, must be dealt with swiftly and appropriately (Section 3.12).
- All materials used in the recycled water system just be approved for use with recycled water. Pipes, valves, sprinkler heads, and storage tanks must be kept leak-free and must be properly labeled as to their recycled water use (Sections 4.2, 4.3, 4.4, and 4.5).
- “RECYCLED WATER - DO NOT DRINK” signs with the Do Not Drink symbol, in English and Spanish, must be properly placed and evident to all personnel (Section 4.1).
- The user’s recycled water system must be maintained so as not to allow conditions such as ponding, runoff, windblown spray, overspray in unapproved areas, or other unapproved uses to exist (Section 3.2).
- Drinking fountains must be protected from exposure to recycled water application (Section 3.2).
- Cross connections are strictly prohibited (Sections 3.1 and 3.2).
- Reuse of any device or devices used for the application of recycled water on a potable water system is strictly prohibited (Sections 3.1).
- Any site that has both a potable water system and a recycled water system present must protect the potable water system (Sections 3.1 and 3.2).

- The recycled water system must be protected from contamination (Section 3.2).
- Violations as to the use of recycled water will not be tolerated, and corrective action must be taken as soon as the violation is apparent (Section 3.2).
- Enforcement of all existing laws, codes, rules, regulations, and statutes shall be the responsibility of the City, State, and local regulatory agencies, with the right of appeal (Section 3.2).
- Any decisions of the City's governing board, with the approval of the regulatory agencies, are final (Section 3.2).

## 1.4 Regulatory Documents

Several documents are available that regulate the use of recycled water. The City has adopted *Rules and Regulations for Recycled Water Service*. For a copy of this publication, contact Doug Hiliker, City of Poway (619-679-5435). The purpose of the *Rules and Regulations for Recycled Water Service* is to establish procedures, specifications, and limitations for the safe and orderly development and operation of recycled water facilities and systems in the City's service area.

Other publications that provide regulations for the development of a recycled water system include:

- American Water Works Association, California/Nevada Section, Reclaimed Water Committee, *Guidelines for the On-Site Retrofit of Facilities Using Disinfected, Tertiary Recycled Water*. Contact Richard Carlson, San Diego County Department of Environmental Health (619-515-6770).
- State of California, Department of Health Services, *Guidelines for the Use of Reclaimed Water*. Contact Toby Roy, State of California, Department of Health Services - San Diego Region (619-525-4159).
- County of San Diego, Department of Environmental Health, *Recycled Water Plan Check and Inspection Manual*. Contact Richard Carlson, San Diego County Department of Environmental Health (619-515-6770).

This User's Manual was compiled in an effort to be in compliance with all codes, laws, statutes, and regulations from all regulatory agencies.



# **Section 2**

## **General Provisions**

### **2.1 Specific Authority**

Various regulations for recycled water use are outlined in the City's Resolution (Policy) No. 97-087.

### **2.2 Local Authority**

Rules and regulations for the end use of recycled water are established by the San Diego Regional Water Quality Control Board, the State of California Department of Health Services Environmental Management Branch, and the San Diego County Department of Environmental Health. These rules and regulations are enforced by the City. All facilities using recycled water shall be designed and operated to meet the standards of the local governing codes, rules, and regulations.

### **2.3 Amendments**

From time to time there may be amendments to existing regulations. These amendments may be made without the consent of the user or City. These amendments will be enforced upon their effective date.

### **2.4 System Responsibility**

It shall be the responsibility of the user to maintain said recycled water system beyond the point of connection, usually the meter, with the City's distribution system. It is the responsibility of the user to ensure that the recycled water is being applied within the guidelines established by all rules and regulations regarding the use of recycled water. The user is also responsible for the following:

- Maintenance of the user's recycled water system.
- Ensuring that all materials used during the design, construction, and maintenance of the system are approved for recycled water use.
- Obtaining all permits and payment of all fees required for the establishment, operation, and maintenance of the user's recycled water system.
- Reporting any and all violations and emergencies to the required local governing agencies.
- Obtaining prior authorization from the City and any required regulatory agency before making any modifications to the approved recycled water system.

The City is responsible for the recycled water and recycled water system up to the point of connection to the user.

## **2.5 User's Permits**

All recycled water systems must operate under the conditions set forth in the User's Permit. A potential user shall complete and submit to the City an Application for Recycled Water Service (Rules and Regulations, Appendix B). Upon acceptance of the application, the City will issue a Permit for Recycled Water Service. The user is responsible for any and all fees associated with the permit process. The City reserves the right to alter, on a case-by-case basis, the permit process with the approval of the regulatory agencies.

## **2.6 Protection of Public Health**

The City reserves the right to take any action necessary with respect to the operation of the user's recycled water system to safeguard the public health.

## **2.7 Authorized Uses**

The use of recycled water is limited to those uses approved by the State of California Department of Health Services, the San Diego Regional Water Quality Control Board, and the San Diego County Department of Environmental Health. Any other use of recycled water is prohibited without the prior approval, on a case-by-case basis, of the City and health agencies. The City may grant approval for other uses only after approval of the appropriate regulatory agency has been obtained.

## **2.8 Approved Use Areas**

Recycled water may only be used in areas approved by the City. Approval will only be granted after the proper application procedure has been followed. In all cases, approval by the City will be contingent upon the complete satisfaction of the requirements of the applicable regulatory agencies. At no time, without the prior written approval of the City, shall a user supply recycled water to an adjoining property of a different permittee or to the property of the same user across a street or alley, nor shall the user give or sell recycled water to another party. Should the property become subdivided, the service shall be considered as belonging to the parcel it enters directly.

All recycled water used on any premises where a recycled water meter is installed shall pass through the meter.

## **2.9 Rate and Fee Schedule**

All rates and fees concerning recycled water service shall be fixed by and established by the City.

## **2.10 Liability**

The City assumes no responsibility for the operation or maintenance of any user's recycled water system beyond the City's point of connection with the user and beyond that which it retains with respect to violations of the regulatory agency requirements. The user assumes all liability and responsibility of every other kind to the end that the City shall be kept whole and blameless at all times in any claim resulting from matters involving quantities, quality, time or occasion of delivery, or any other phase of the maintenance, operation, and service of the user's system. The City shall not be liable for any water damage or other damage caused by the user due to defective or broken plumbing or faulty service, nor shall the City be liable for damage caused by the user's facilities.

## **2.11 Contingency Reservation**

If, at any time during construction or operation of the recycled water system, real or potential hazards are evidenced, the City reserves the right and has the authority to terminate immediately, without notice, recycled water service in the interest of protecting the public health.

# Section 3

## Requirements for Operation

### 3.1 General

Recycled water service shall be provided by the City only to those users who have a current User's Permit for such service, unless otherwise determined by the City. This service and/or User's Permit can be revoked at any time.

Recycled water service shall be available only in accordance with all applicable federal, state, and local statutes, ordinances, regulations, contracts, and any other requirements including the California Water Code, the California Code of Regulations Title 22, and requirements and regulations imposed by the California Regional Water Quality Control Board - San Diego region, State of California Department of Health Services Environmental Management Branch, and San Diego County Department of Environmental Health.

### 3.2 Conditions of Service

The City reserves the right to revoke a User's Permit if all or any of the service conditions are not satisfied at all times. Service to a user may be terminated at any time if:

- The quality of the recycled water does not comply with the requirements of the regulatory agencies.
- If the user's operation does not conform with all appropriate regulations.
- There is nonpayment of service fees and charges.

The City reserves the right to control and schedule the use of recycled water if control and scheduling are necessary to maintain acceptable working conditions within the City's recycled water distribution system. These and other service conditions will be administered by the City at its discretion.

If the available service pressure is higher than the user can accept, the user shall be responsible for providing a pressure-reducing valve downstream of the service meter. If available pressure is lower than what the user needs, the user shall be responsible to provide booster pumping downstream of the meter. Any pumping of recycled water requires the prior written approval of the City.

Conditions that directly or indirectly cause the following, whether by design or system operation, are strictly prohibited:

- **Runoff Conditions.** Conditions that directly or indirectly cause a runoff outside of the approved user area.
- **Ponding Conditions.** Conditions that directly or indirectly cause a ponding outside of or within the approved use area.
- **Windblown Spray Conditions.** Conditions that directly or indirectly permit windblown spray to pass outside of the approved use area.
- **Unapproved Uses.** Use of recycled water for any purpose other than those explicitly approved in the current effective User's Permit issued by the City and without the prior knowledge and approval of the appropriate regulatory agencies, is strictly prohibited.
- **Disposal in Unapproved Areas.** Disposal of recycled water for any purpose, including approved uses, in areas other than those explicitly approved in the current effective User's Permit issued by the City and without the prior knowledge and approval of the appropriate regulatory agencies, is strictly prohibited.
- **Cross Connections.** Cross connections, as defined by the California Code of Regulations, Title 17, resulting from the use of recycled water or from the physical presence of a recycled water service, whether by design or system operation, are strictly prohibited.
- **Drinking Fountains.** Drinking fountains located within the approved use area designed by the User's Permit shall be protected from contact with recycled water, whether by windblown spray or by direct application through irrigation or other approved Use. Lack of such protection, whether by design or system operation, is strictly prohibited.
- **Hose Bibs.** Use or installation of hose bibs on any user's recycled water system that presently operates or is designed to operate with recycled water, regardless of the hose bib construction or identification, is strictly prohibited.

### 3.2.1 Protection of Potable Water Systems

On premises where both potable water and recycled water exist, the potable supply must be protected from contamination at all times. This is done in accordance with the approved site-specific drawings and User's Permit. At no time shall there be a physical connection between the recycled water system and the potable water system anywhere on the user's premises.

If a reduced pressure principle backflow prevention device is approved, it must be tested at least annually.

### 3.2.2 Protection of the Recycled Water System

Backflow protection is not normally required on recycled water systems. However, the City must maintain the quality of the distribution system. To this end, the City must ensure that the quality of the

recycled water provided is not compromised by an activity of the User. Therefore, the City may require approved backflow protection at a recycled water service connection or at specific on-site locations where said use could degrade the quality of the recycled water distribution system. Backflow prevention devices must be approved by the City and regulatory agencies, be properly maintained. In addition, both the recycled and potable systems shall be checked annually with the appropriate dye or pressure test to ensure that a cross-connection does not exist. These tests must be done in conjunction with the City and the local health agency. Records must be maintained for a minimum of three years.

### **3.2.3 Violations**

The City reserves the right to determine if a violation of the conditions under which the User's Permit was issued has occurred. Violations may include noncompliance of any of the following prohibitions: runoff conditions, ponding conditions, windblown spray conditions, unapproved uses, disposal in unapproved areas, cross connections, unprotected drinking fountains and use of hose bibs, whether willful or by accident. Any willful or accidental violation of any existing federal, state, or local ordinance, code, law, or statute regulating the use of recycled water constitutes a violation.

### **3.2.4 Notification**

It is the responsibility of the user to notify the City of any failure in said recycled water system, or operation, whether or not he/she believes a violation has occurred. It is also the responsibility of the user to notify the City of any violation that might occur as a result of any action of the user or his or her personnel might take during the operation of said recycled water system. If there are any doubts as to whether a violation has occurred, it is the responsibility of the user to report each occurrence to the City so a determination can be made.

### **3.2.5 Corrective Action**

If the City's investigation reveals that a violation has occurred, the City shall immediately notify the users. It is the responsibility of the user to immediately initiate corrective action to eliminate the violation condition. If, in the opinion of the City, the violation constitutes an immediate hazard to the public health, the City shall immediately terminate service to the user. It shall be at the discretion of the City to determine if a violation has been corrected.

### **3.2.6 Enforcement**

The City shall enforce all existing rules and regulations pertaining to the use of recycled water and/or recycled water systems. Regulations concerning the use of any recycled water or recycled water system shall be applied with equal force and effect to any person, persons, or firm, public or private. There shall be no deviations from these regulations except upon written authorization of the City, acting within any and all applicable regulations.

### **3.3 Design Approval**

Prior to the construction of any new, or renovation of an existing, recycled water system, the design of such system must be approved by the City. Approval shall be contingent upon evidence that all applicable design requirements, rules, and regulations for a recycled water system are satisfied.

### **3.4 Service Start-Up**

Following acceptance of the user's recycled water system by the City, the user may request regular service start-up. Upon receipt of the start-up request, the City will notify the appropriate regulatory agencies and schedule a final inspection to include regulatory agency representatives. The City shall confirm a start-up to the user and the regulatory agencies.

### **3.5 Inspection**

The City and/or the San Diego County Department of Environmental Health or its authorized agencies shall inspect the construction of the user's recycled water system to ensure that it is in compliance with the approved construction plans, rules, and regulations. The San Diego County Department of Environmental Health shall be involved in all phases of planning, construction, and start-up, along with the City's representative and, in some cases, representatives of the San Diego Regional Water Quality Control Board and the State of California Department of Health Services (Office of Drinking Water). This inspection is to ensure that the proper equipment was used, that spray patterns are adjusted to ensure proper coverage without excessive overlapping, and that there are no cross connections with the potable water system. Conditions that might create runoff, ponding, or windblown spray, especially on slopes, will be corrected. Spray patterns will be checked to see they do not encroach upon public facilities such as drinking fountains or areas outside the approved use area. After correction and verification, the system will be permitted to utilize recycled water. During the lifetime of the recycled water system, the City shall periodically inspect the recycled water system to ensure compliance with any and all applicable rules and regulations.

### **3.6 Surveillance**

It is the responsibility of the user to provide surveillance and supervision of said recycled water system in a manner that assures compliance at all times with current regulations. The user shall designate a Recycled Water Supervisor with the approval of the City to provide liaison with the City. This person shall be available to the City at all times, shall have the authority to carry out any requirements of the City, and shall be responsible for the installation, operation, and maintenance of the recycled and potable water systems as well as prevention of potential hazards. The City must be notified immediately of any change in this position. The City shall provide periodic inspections of the user's system and report any and all violations to the appropriate regulatory agency with applicable procedures that have been established by law, code, permit, or practice.

### **3.7 Personnel Training**

It is the responsibility of the user that all operations personnel are trained and familiar with the use of recycled water. Any training program should include, but not be limited to, the following:

- Operations personnel must be aware that recycled water, although highly treated, is nonpotable.
- Operations personnel must understand that conditions such as ponding and runoff are not allowed.
- Good personal hygiene must be followed.
- At no time shall recycled water be used for human consumption.
- Operations personnel must understand that working with recycled water is safe provided that good common sense is used and appropriate regulations are followed.
- Operations personnel must understand that there is never to be a direct connection between the recycled water system and the potable water system.

All new employees shall be trained in the proper use of recycled water. The Recycled Water Supervisor should be held accountable to ensure that employees are not using recycled water in a careless or hazardous manner.

### **3.8 Periods of Operation**

Operation of the user's recycled water system shall occur during periods of minimal use of the approved area by the general public. This is usually between the hours of 10 p.m. and 6 a.m. Operation during other times may be requested of the City and considered on a case-by-case basis with the approval of the regulatory agencies. Any additional regulations, such as on-site supervision during application, must be strictly adhered to. Consideration shall be given to allow a maximum dry-out time before the area is to be used by the public. At no time will recycled water be applied at a rate that is greater than the infiltration rate of the soil. Automatic control systems will be used and programmed to prevent ponding and runoff of recycled water. The recycled water system will not be allowed to operate for periods longer than needed to satisfy the landscape water requirements. The recycled water system shall be operated so as to prevent overspray or windblown spray into nonapproved areas.

### **3.9 Maintenance**

The user shall institute a preventive maintenance program that will ensure that the recycled water system remains in compliance at all times. A preventive maintenance program should include, but not be limited to, the following:



- Regular inspections shall be conducted by the Recycled Water Supervisor of the entire recycled water system including sprinkler heads, spray patterns, piping and valves, pumps, controllers, etc. Any discrepancies shall be corrected immediately.
- All warning signs shall be checked for their proper placement and readability. Damaged or unreadable signs shall be replaced.
- Special attention should be given to spray patterns to eliminate ponding, runoff, and windblown spray conditions.
- A record keeping system should be established and accurate records of all inspections, modifications, and repair work maintained.

In addition to deficiencies found during inspections, broken sprinkler heads, faulty spray patterns, leaking pipes or valves, etc., shall be repaired as soon as the malfunction becomes apparent.

A periodic check should be made for cross-connections using the following method:

- Shut off the recycled water supply source. Open the irrigation system, allowing the pressure to dissipate. If the pressure will not dissipate and the system continues to flow water, a cross-connection may exist.
- If no cross connection exists, reactive the recycled water system and shut down the domestic supply source. Open the domestic system, allowing the pressure to dissipate. If the pressure will not dissipate and the system continues to flow water, a cross-connection may exist.

If testing reveals the presence of a cross-connection, both the reclaimed and potable water systems must be immediately shut down at the connection point with the City. The City, the San Diego County Department of Environmental Health, and the California Department of Health Services (Office of Drinking Water) must be immediately notified. Neither system may be reactivated until the cross-connection has been eliminated, all contamination has been removed, and the City and the health agency have been completely satisfied that no further concern exists.

### **3.10 Modifications**

No modifications shall be made to any recycled water system by the user without the prior approval of the City. This includes modifications to the approved plans or to an operational system. Detailed plans of any modifications should be submitted to the City and the modifications inspected by the City prior to their being placed in operation. See Section 3.12 for emergency modifications.

### **3.11 Cross-Connection Program**

Cross-connections with the potable water system at any point or at any time are strictly prohibited. Any installation that has both potable water and recycled water present **must** have an approved reduced

pressure principle backflow prevention assembly on the potable water supply at the potable water service connection. No device, hose, pipe, meter, valve, etc. that has been used in conjunction with recycled water shall be attached to the potable water system.

Backflow prevention assemblies must be of the approved type and installed as per approved plans. A maintenance program that includes at least annual testing by a tester certified by the San Diego County Department of Environmental Health must be implemented. Records of annual tests, repairs, and overhauls shall be kept by the user with copies forwarded to the City and the San Diego County Department of Environmental Health.

All provisions of Section 7601 of Chapter 5 of Title 17 of the California Code of Regulations, concerning protection of drinking water systems against cross-connections and backflow shall be strictly complied with.

### **3.12 Emergency Procedures**

- **Unauthorized Discharge.** It is the responsibility of the user to report to the City any and all system failures that result in an unauthorized discharge of recycled water. An immediate oral report, followed by a written report, is required.
- **Contamination of Drinking Water.** In the event of contamination of the potable water system due to a cross-connection on the user's premises, the San Diego County Department of Environmental Health, the California Department of Health Services (Office of Drinking Water), and the City shall be immediately notified by the user so that appropriate measures may be taken to immediately correct the contamination or pollution problem. (See Section 5.1 for contact persons.)
- **Emergency Modifications.** Emergency modifications or repairs can be made by the user to said system without the prior approval of the City to prevent contamination, damage, or a public health hazard. As soon as possible, the user shall notify the City of such emergency modifications and file a written report.

# Section 4

## Marking and Equipment

### 4.1 General

All materials, apparatus, piping, valves, controllers, sprinkler heads, pumps, etc. shall be approved for use with a pressurized recycled water system and installed as per approved plans. The recycled water system must conform to the American Water Works Association (AWWA) California-Nevada Section's *Guidelines for Distribution of Nonpotable Water*. Deviations shall not be allowed without prior approval. System installation shall conform with the Uniform Plumbing Code and all other local codes, rules, and regulations. The approved area shall be clearly marked, and all facilities using recycled water shall be marked, "RECYCLED WATER - DO NOT DRINK" in English and Spanish. The Do Not Drink symbol (Figure 1) shall be present on all signs.

### 4.2 Piping

All piping shall be installed according to the approved plans and marked as required. Installation shall be in accordance with the latest edition of *International Association of Plumbing and Mechanical Officials (IAPMO) Standard IS-8* with IAPMO listed fittings, primers, and solvents, except the exposed piping need not be wrapped or protected from sunlight. All recycled waterlines (pressure/nonpressure), valve boxes, and appurtenances shall be identified to clearly distinguish between recycled water and potable water systems.

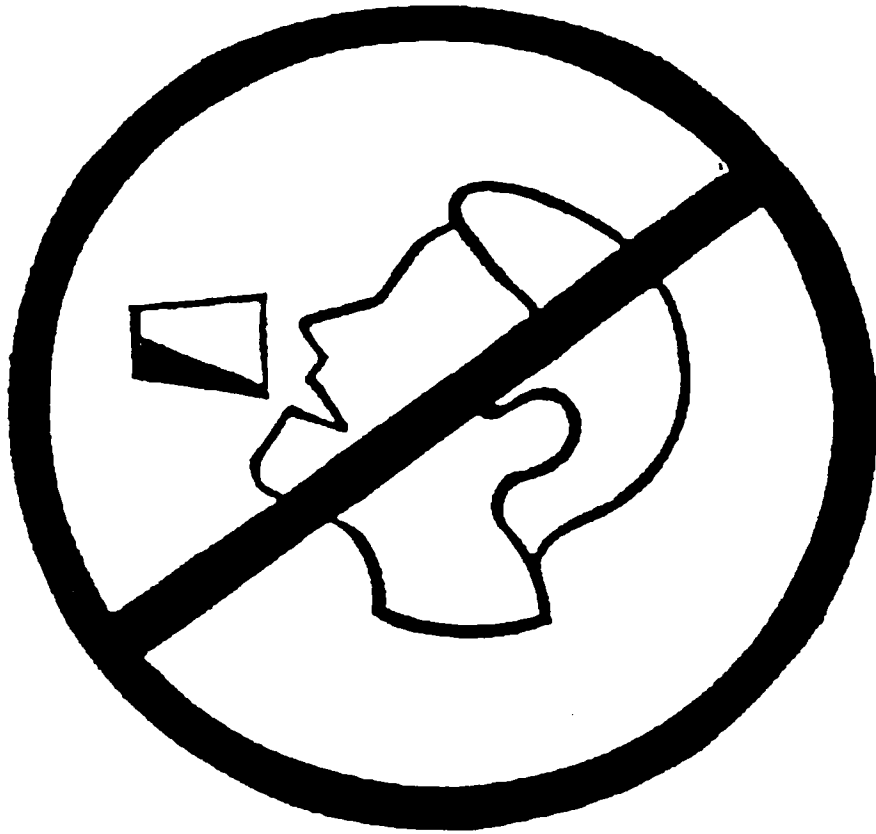
All buried recycled waterlines (pressure/nonpressure) shall be identified by continuous lettering on 3-inch minimum width, purple tape with 1-inch black or white contrasting lettering bearing the continuous wording "CAUTION - RECYCLED WATER" permanently affixed at 10-foot intervals atop all horizontal piping, laterals, and mains. Identification tape shall extend to all valve boxes and/or vaults and exposed piping.

The use of purple colored pipe with the continuous wording "CAUTION - RECYCLED WATER" printed on opposite sides of the pipe is an accepted alternative to warning tape.

Identification tape is not necessary for extruded color PVC with continuous wording "POTABLE WATER" printed in contrasting lettering on opposite sides of the pipe.

Exposed piping, valve boxes, vaults, quick-coupling valves, outlets, and related appurtenances shall be color coded and labeled or tagged to differentiate recycled water from potable water.

Buried irrigation pipe shall be PVC schedule 40 appropriate marked. Piping buried under pavement shall be sleeved with the sleeve being twice the diameter of the irrigation pipe, i.e., a 2-inch sleeve required for a 1-inch irrigation pipe. Partially buried pipe shall have purple marking tape attached to the



**Do Not Drink Symbol**

CITY OF POWAY  
RECYCLED WATER DISTRIBUTION SYSTEM  
**WARNING SIGNS**

**FIGURE 1**

top of the pipe extending its entire length. Flexible conduits or hoses shall be clearly marked "CAUTION - RECYCLED WATER" with each adapter or fitting painted purple.

Tags shall be identified with the appropriate wording on both sides. Tags identifying recycled water shall have the appropriate wording on one side and symbol on the opposite side. A variety of warning tags that are acceptable, as well as placement, are shown in Figure 2 (a, b, c, d, e, f).

## **4.3 Valves**

### **4.3.1 Quick-Coupling Valves**

Quick-coupling valves shall be the Nelson 42 with 40K key or approved equal made specifically for recycled water use. Quick-coupling valves shall be 3/4-inch or 1-inch nominal size and of brass construction with a normal working pressure of 150 psi. The cover shall be permanently attached and made of rubber or vinyl, purple in color, and provided with a lock. In order to prevent unauthorized use, the valve shall be operated only with a special coupler key with an acme thread for opening and closing the valve. Quick-coupling valves shall be installed approximately 12 inches from walks, curbs, headboards, or paved areas, tagged with warning tag and installed in a marked valve box. Figure 2c shows the placement of the warning tag.

Gate valves shall be installed in a marked valve box with crushed rock in the base with a warning tag on the valve operator. Figure 2d shows the proper placement of the warning tag.

### **4.3.2 Remote Control Valves**

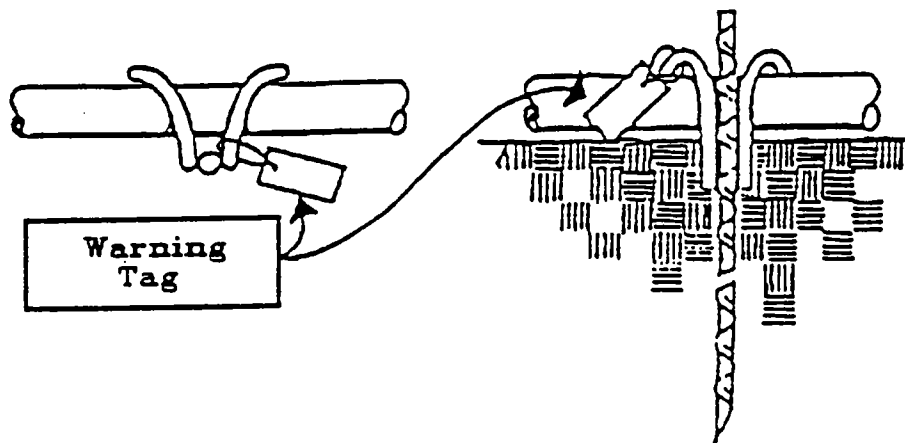
Remote control valves shall be installed in a marked valve box with crushed rock in the base with a warning tag on the operator. Figure 2f shows the proper placement of the warning tag. For each valve system, remote control valves shall be adjusted so the most remote sprinkler heads operate at the pressure recommended by the manufacturer and give a uniform distribution of water by the sprinkler heads.

## **4.4 Backflow Prevention Assemblies**

Backflow prevention assemblies on recycled water systems must be of an approved type and installed as per approved plans. Backflow prevention assemblies must be maintained so as to assure satisfactory operating condition. This includes annual testing of backflow prevention assemblies by a tester certified by the San Diego County Department of Environmental Health and the keeping of accurate records. Backflow prevention assemblies must be conspicuously labeled "RECYCLED WATER - DO NOT DRINK" in both English and Spanish. Backflow testing equipment used for recycled water must not be reused on potable water systems.



**Sample Warning Tag  
Background Purple with Black Lettering**



**Pipe Stabilizer**

**CITY OF POWAY  
RECYCLED WATER DISTRIBUTION SYSTEM  
PLACEMENT OF WARNING TAGS**

**FIGURE 2**

