

**RECYCLED WATER USE GUIDELINES
FOR
RESIDENTIAL DUAL PLUMBED HOMES**

**El Dorado Irrigation District
2890 Mosquito Road
Placerville, California**

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SECTION 1.0 GENERAL INFORMATION

1.1 INTRODUCTION

In El Dorado County an adequate and safe supply of potable water is essential yet vulnerable to interruption by natural forces such as prolonged drought. New supplies of potable water are becoming scarcer yet demand is increasing. During drought years, this problem intensifies. A promising solution is to serve irrigation and other non-potable demands with water which is not considered potable. By using recycled water for these purposes, the potable water supply can be used for the primary function of human consumption, such as drinking, cooking, bathing and washing.

This User's Manual has been assembled to provide the El Dorado Irrigation District dual plumbed customers a basic understanding of what recycled water is and to provide users a source of information for the day-to-day operation and control of these systems. This manual, based on existing codes, laws and regulations of agencies that govern water reclamation activities, will help the user to comply with all existing regulations involving the operation of recycled water system for front and backyard irrigation.

1.2 What is Recycled Water?

Water reclamation is the treatment and management of municipal wastewater to produce a water of suitable quality for non-potable beneficial uses. Recycled water is a manufactured product. It is a highly treated and disinfected water originating from municipal wastewater. The treatment processes and final product quality must, by law, meet standards defined by Title 22, Chapter 4, of the California Code of Regulations. Tertiary treated recycled water is odorless, colorless and pure enough for human contact but **not** for human consumption.

To produce recycled water, wastewater is treated at a reclamation plant that duplicate's nature's own cleansing process, only at a much faster rate. The result is a high quality water that is safe to use for many applications. Proper use of this product is safe and provides a very negligible health hazard. Reclamation offers great potential for future additional water supplies in El Dorado County where conventional water supply sources are scarce.

1.3 Uses Of Recycled Water

Landscape irrigation is the single largest use of recycled water within the El Dorado Hills Area. In addition, recycled water could also be used for some industrial processing, cooling towers, soil compaction and dust control at construction sites; in recreational lakes, ponds and ornamental fountains; crop initiation; and flushing toilets and urinals in some commercial buildings and offices. In fact, recycled water can be used for most non-potable needs.

Recycled water has been used successfully in California and other states, particularly Florida, Arizona and Texas, for many years. Many well known sites have used recycled water, such as San

Francisco's Golden Gate Park as early as 1932. The El Tovar Hotel at Grand Canyon National Park used recycled water for toilet flushing in 1955. In fact, the first regulations published in California were adopted in 1918. It is expected that continued demand for new supplies will allow recycled water to serve these new and expanding uses.

In 1999 the El Dorado Irrigation District obtained state approval for using recycled water for the irrigation of landscaping in the front and backyards of about 3,500 homes in Serrano. Since then hundreds of residential lots have been receiving recycled water.

1.4 Is It Safe?

Recycled water is safe to use! Potential health risks associated with the use of recycled water have been well-documented nationwide as water reclamation projects are implemented and carefully monitored by responsible local health authorities and water quality control agencies. Tertiary recycled water is a highly treated, filtered and disinfected product according to California Department of Health Services criteria. These standards for recycled water are among the most stringent in the world. Title 22 has stipulations applying to various types of reuse and levels of required treatment.

1.5 How Is Using Recycled Water Different?

Recycled water facilities to be used for landscape irrigation in the front and backyard are separate from all onsite potable water systems. The recycled water customer will be required to use purple colored pipe, mark controllers; and ensure there are no cross-connections between the potable and recycled water systems. All exterior potable water lines will be copper as compared to purple colored plastic for recycled water. There will be annual and periodic inspection by the District, or its representative, to ensure compliance with recycled water regulations.

SECTION 2

OPERATING CONDITIONS AND USER GUIDELINES

2.1 GENERAL

The operation of a recycled water system is hydraulically the same as a potable water system. However, there are basic conditions and requirements, different from potable systems, that must be understood and followed when constructing, operating and maintaining a recycled water system. The following conditions and guidelines are summaries of State of California Department of Health Services reclamation criteria (Title 22 of the California Code of Regulations), American Water Works Association (AWWA) reuse guidelines, and the District rules and regulations.

2.2 OPERATING CONDITIONS

A. Permits:

The El Dorado Irrigation District allows residential subdivisions to receive recycled water, after the preparation of an Engineer's Report, subject to the approval of the California Department of Health Services. It does not allow individual homes, not in such subdivisions, to receive recycled water. If your house is located in an approved subdivision, your parcel is required to use recycled water for all landscaping uses. Potable water may only be used indoors, through hose bibs connected to the house and for swimming pools and spas. Dual plumbed parcels are intended to use recycled water for landscape irrigation.

B. Liability and responsibility:

The user assumes all liability and responsibility for all phases of construction, operation and maintenance of the recycled water system in the front and backyard. The user's recycled water system starts downstream of the Point Of Connection (POC), to the recycled water meter located adjacent to the curb. The El Dorado Irrigation District is responsible for water quality and operation and maintenance of the system upstream from the POC.

C. Compliance with rules and regulations:

Recycled water must be used in accordance with all applicable federal, state and local ordinances and regulations. During the lifetime of a recycled water system, it will be checked periodically by the District to ensure continued compliance with all regulatory agencies. As the industry becomes more experienced with recycled water use, there may be changes to existing regulations. These changes may be made without the consent of the user or the District and will be enforced upon their effective date.

D. Authorized uses:

Recycled water must be used for all landscape irrigation in the front and backyard of the home. Discharge of recycled water for any purpose, including approved uses, in areas other than those authorized, is prohibited.

E. Notification and violations:

It is the responsibility of the user to routinely monitor and inspect the recycled water system for any situation that may not be in conformance with the regulatory requirements. Problems such as the destruction of information signs, controller malfunctions, excessive ponding or runoff of recycled water, broken or out-of-adjustment sprinkler heads, etc. must be corrected as soon as they become apparent. Emergency situations such as pipeline ruptures, cross-connection problems or emergency modifications made to prevent contamination of the potable water system must be reported immediately to the District. In case of misuse of the recycled water, the District may take any actions needed with respect to the operation of your recycled water system to protect the public health. This may include immediate shut down of recycled service to your site.

F. Recycled water supervisor:

The user, namely the home owner or home occupant in case the home is rented, is responsible for the day to day activities and long term operation and maintenance of the system.

G. Ability of the District to control use:

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

H. System modification:
If there is a need for modification, renovation or other major changes in the on-site recycled water system, prior approval must be obtained from the District.

I. Rates, Fees and Other Charges:
The District will determine all water rates, fees and charges concerning recycled water service. These may be changed at the discretion of the District and may be subject to the same conservation pricing levels as potable water to encourage efficient water use.

2.3 USER GUIDELINES

A.. Identification:
The recycled water system and related equipment must be identified differently from the potable system so that the systems remain separate from each other.

B. Separations:
Buried recycled and potable water pipes should be separated to the maximum extent possible. Pressurized recycled water irrigation lines must have a 10 ft. horizontal and 12 inch vertical separation from pressurized potable water lines. Potable water lines also must have a 12 inch horizontal and 12 inch vertical separation from all other water lines. Situations may occur where this is not feasible. Each such situation shall be examined and any decisions to vary from this minimum separation shall be made by the District on a case-by-case basis.

C. Best Management Practices (BMPs):
BMPs should be implemented to achieve a safe and efficient irrigation system. When implemented, conditions causing runoff, ponding and windblown spray (misting) are minimized to a negligible amount, and in some cases, eliminated. A detailed list of BMPs can be found in Section 2.

D. Hose bibs:
Hose bibs in the recycled water system are not allowed in residential irrigation systems. All hose bibs in front and backyards of residents shall receive potable water for potable water uses and should be connected to the house.

E. Time of operation:
Irrigation with recycled water is limited to those hours which provide a minimum opportunity for public contact of the spray. The District requires that turf irrigation be limited to between 9:00 PM to 6:00 AM. Drip irrigation systems may be operated at any time.

2.4 DESIGN AND INSPECTION

- A. Design of landscaping for the front and backyard in homes must conform to The District's Recycled Water On-Site Facilities Standards For Dual Plumbed Homes.
- B. Design and construction of all landscaping is the responsibility of the homeowner. Design of irrigation systems must be submitted to the the District or the District's approved designer for approval, prior to any construction, to assure compliance with the recycled water system design criteria. After completion of construction and prior to covering the irrigation system, it will be inspected by the District to assure compliance of material used and construction with the District's standards.

SECTION 3.0

IDENTIFICATION OF RECYCLED WATER EQUIPMENT AND USE AREAS

3.1 GENERAL

Hydraulically, recycled and potable systems operate exactly the same. The main difference is identification of equipment. Recycled water systems must be identified differently from potable systems to prevent cross-connections, backflow conditions and other situations that could jeopardize public health.

Over the last 15 years, the recycled water industry has adopted the color purple to signify that recycled water is being used. As a result, piping material is currently available in a purple color for use in recycled water systems. The common thread linking all items is the message being conveyed: "Recycled water is being used; it is safe for designated uses but you should avoid drinking it".

3.1 PIPING

- A. Purple colored pipe. All pipes in the recycled water system shall be purple pipe with printing stating recycled water. It is available from most irrigation supply dealers.
- B. When potable water lines are constructed in the backyard to serve potable water mandated uses, such as swimming pools and spas, all piping conveying potable water shall be copper.

3.3 ABOVE GROUND EQUIPMENT

Recycled water equipment that is above ground, or exposed such that it is clearly visible to the public, should be identified differently from potable water equipment.

- A. Above ground components should be tagged, colored purple or otherwise identified by some means to show that recycled water is being used.

- B. Irrigation valve box covers can be manufactured with the purple color, or branded with the words “Recycled Water”.

SECTION 4

PRACTICLE DO’S AND DON’TS FOR THE USE OF RECYCLED WATER

4.1 DO’S

1. Choose an “Authorized Contractor” from the District’s list of contractors who have completed an orientation class on recycled water use.
2. Take preventative measures to insure no cross-connections can occur by not constructing potable water lines in the backyard using plastic pipe.
3. Maintain and submit as-built drawings of any and all changes or additions to your recycled water system.
4. When performing repairs or modifications to the recycled water system, use only materials approved for recycled water use.
5. Closely monitor the recycled water system operation and be alert to overspray, run-off, and ponding. If this occurs, make corrections to minimize these conditions.
6. Keep systems functioning properly. Repair any and all damage to the recycled water system immediately. Report breaks or spills directly to the District.
7. Once a year hire a certified tester to test the backflow prevention device located next to your potable water meter, and repair it if needed.
8. Educate all family members on the correct uses and restrictions of recycled water.
9. Wash all fruits and vegetables grown in the backyard with potable water before eating them.
10. If you sell, rent or lease your house to others, it is your responsibility to inform the new occupants about the presence of recycled water and the rules and regulations associated with that. Provide the renter with a copy of the “Declaration of Restrictions” you signed when you purchased the house and a copy of these regulations. Notify the District when your home is rented.

4.2 DON’TS

1. Do Not Drink Recycled Water.
2. Recycled water should not be used to wash hands or other parts of the body.
3. Equipment that has been in contact with recycled water should not be used in conjunction with any potable water system.
4. Do not attempt to modify or change the recycled water system without authorization from the District.
5. Do not add hose bibs to the recycled water system.
6. Do not use recycled water in swimming pools or spas.

SECTION 5.0
CONTACT LIST

The following list provides some of the contact personnel for questions regarding the use of recycled water.

El Dorado Irrigation District

Recycled Water Compliance Inspector	530-622-4513
Recycled Water Supervisor	916-933-6202
Wastewater Supervisor, El Dorado Hills WWTP	916-933-6202
Wastewater Supervisor, Deer Creek WWTP	530-672-9044
EID Customer and Developer Services	530-622-4513
EID After Hours Emergency	530-622-4513