Rancho California Water District’s Recycled Water Site Supervisor Training Program

THIS ONLINE TRAINING PROGRAM IS TO EDUCATE SITE SUPERVISORS REGARDING THEIR ROLES AND RESPONSIBILITIES FOR THE PROPER USE OF RECYCLED WATER. THIS TRAINING PROGRAM SHOULD TAKE APPROXIMATELY AN HOUR TO COMPLETE, INCLUDING A COMPREHENSIVE TEST TO ENSURE A COMPLETE UNDERSTANDING OF RECYCLED WATER AND THE ROLE OF THE SITE SUPERVISOR.
Rancho California Water District (RCWD) is a local, independent “Special District,” organized and operating pursuant to the California Water Code. RCWD’s seven-member governing body, the Board of Directors, is directly elected by the voters for a fixed term of four years and is responsible for setting policy and decision-making. The District’s responsible fiscal management and planning provide the financial means to ensure reliable water and wastewater system operations. The mission of RCWD is to deliver reliable, high-quality water, wastewater, and reclamation services to its customers and communities in a prudent and sustainable manner. To promote our mission, RCWD has adopted a mandatory recycled water use policy (Resolution No. 2007-10-5) requiring all new projects within one mile of existing recycled water mains be considered for recycled water.
Where does recycled water come from?

- Recycled water starts out as wastewater (water that has been used indoors by residents and businesses, as well as in some industrial processes), which is then treated so that it is suitable for landscape irrigation, industrial uses, and other non-drinking purposes. Recycled water is processed through mechanical and biological treatment, as well as filtration and disinfection systems, before being provided to customers. This treated water meets the most stringent federal water quality regulations.
Recycled water produced by RCWD is intended for irrigation. To ensure that a consistent high level of safety is maintained, recycled water is continually regulated, monitored, and tested using standards set by the U.S. Environmental Protection Agency (EPA), Regional Water Quality Control Board (RWQCB), and State Water Resources Control Board (SWRCB). This ensures that the water quality far exceeds its intended use.

- RCWD provides disinfected tertiary to all recycled water customers.

- Tertiary treated recycled water is high quality water that is not approved for drinking, but is approved for landscape irrigation, crop irrigation including edible root crops, schools, parks, golf courses, snow making, soil compaction, recreational ponds with body contact. (RCWD does not allow body contact with recycled water)

- These approved uses are listed in Title 22 of the California Code of Regulations.
What are the Benefits of Recycled Water?

Recycling water is similar to recycling aluminum cans or paper, where scarce resources are reused, instead of thrown away. Reusing water helps to reduce the potable water taken from groundwater aquifers and other sources. Every gallon of recycled water that is used is a gallon of fresh water that is saved. Recycled water locally produced provides a sustainable source that will be here rain or shine. Recycled water eases the threat of water shortages for expensive landscaping due to drought and is considerably less expensive than imported drinking water making it the right economic choice for most budgets.
Natures Way of Recycling Water
All water is recycled when it rains or snows. This water enters the soils or runs off into creeks and rivers and as it evaporates it travels back into the atmosphere. This is called evapotranspiration.

Evapotranspiration is the sum of evaporation from the land surface plus transpiration from plants.

An acre of corn gives off about 3,000-4,000 gallons of water each day, and a large oak tree can transpire 40,000 gallons per year.

Produced recycled water through advanced treatment does what nature does, however this water is distributed to areas of beneficial uses.
Recycled Water Requirements

- Recycled water is regulated differently than potable drinking water. These requirements include additional steps to ensure that proper handling, usages, signs, color coded boxes, designated watering times and sprinkler heads along with purple pipes are used and maintained at all use sites.

- There is also a requirement for a Site Supervisor. A single point of contact responsible for their role and knowledgeable in recycled water uses. This program is intended for Site Supervisors and all recycled water customers to familiarize them with the background and requirements associated with the use of recycled water.

- The permit issued to RCWD requires that each recycled water user identify a Site Supervisor.
Regulators and their Roles

- **State Water Resources Control Board (SWRCB)** - Administers and enforces regulations regarding public health.

- **Regional Water Quality Control Board (RWQCB)** – Issues permits and implements State regulations.

- **Recycled Water Permittee (RCWD)** – Approves recycled water use sites, enforces regulations, inspects use sites to ensure compliance, inspects all new recycled water use sites while constructed or modified.
All regulatory agencies set minimum regulations regarding recycled water, but it is RCWD’s responsibility as the water purveyor to meet or exceed those regulations when it comes to protecting public health and approved uses for recycled water within the service area. It all starts with proper identification and purple is the color associated with recycled water.
Identification of Recycled Use Sites

- Proper signage. This is the most commonly identified item when entering a recycled water use site. They are posted at entries and at intermittent spacing around the site.
- Sprinkler heads are required to be purple.
- Valve boxes are required to be purple.
Quick couplers are required to be purple and are used in lieu of hose bibs. (Hose bibs are prohibited)

Proper tagging for valve boxes and control valves.

All piping is required to be purple.
The Do’s of Recycled Water

- **Do:**
  - Install and maintain signs at all points of entry (pedestrian and vehicular).
  - Install and maintain labels and tags on recycled and potable water systems.
  - Operate irrigation system: Between 9:00 p.m.–6:00 a.m. if automatically controlled (unless other restrictions apply).
  - At other times if manually controlled and supervised (by dedicated site supervisor) to make sure the recycled water doesn’t come in contact with the public.
  - At any time if use site is restricted to the general public.
  - Use quick couplers instead of hose bibs.
  - Contact RCWD if any water system (potable or recycled) modifications are anticipated within the use site.

- **Immediately contact RCWD if any of the following has occurred:**
  - A recycled water line break, spill, or off-site discharge of recycled water.
  - A violation of water recycling requirements.
  - A cross-connection between the recycled and potable water systems.
  - Educate/train site workers on safe use and restrictions of recycled water.
  - Keep records and as-built drawings up to date and accessible.
  - Assist and cooperate during Periodic Visual Inspections.
  - Assist and cooperate during Periodic Cross-Connection Testing.
Don’t:

- Drink recycled water.
- Use recycled water to wash hands or any other part of body.
- Remove recycled water identification signs, tags, or labels.
- Cross-connect two dissimilar water systems (recycled to potable).
- Allow recycled water to contact drinking fountains or eating areas.
- Allow recycled water to run off the use site property by either overspray or overwatering.
- Allow recycled water on an unapproved site.
- Put hose bibs on recycled water systems.
- Use the same equipment on both recycled water and domestic water systems (e.g., quick couplers, tools, hoses, etc.).
- Modify any recycled water system without prior approval of RCWD.
RCWD provides this training to all site supervisors and recycled customers to assist them in understanding all regulatory requirements required from the State. Recycled water is regulated differently than potable water, and all recycled use sites require a site supervisor be familiar with rules and laws associated with its use.

Site Supervisors are required to become trained. They should be familiar with recycled water, how it is manufactured and the practices and procedures of its approved uses.

The Site Supervisor is responsible for the safe and efficient uses of recycled water.
Site Supervisor Role

- Site Supervisors are responsible for the proper use and handling of recycled water. They are to be familiar with the plumbing and irrigation systems of their sites making sure of proper identification and signage.

- The Site Supervisor is the contact person if there is an issue found or if one arises on site. They should be readily available to assist with corrective actions to maintain site compliance.

- All recycled use sites are required to have a Site Supervisor who can train and assist other maintenance staff in the proper use of recycled water.

- Site Supervisors are required to report to the District all system failures or cross connections so mitigation procedures can be administered.
The Site Supervisor Role

- The Site Supervisor should be familiar with the following:
  - Meter location
  - Backflow devices
  - Controller, master valves, control valves and sprinklers
  - Quick couplers
  - Signs
  - Tags
  - All piping and design layout
Understand Your Landscape Design

- The landscape topography should be designed to capture as much nuisance water and storm water as possible, thereby avoiding off-site runoff. The use of pervious surfaces and areas is preferred; the use of impervious surfaces and materials within the landscaped area should be limited to the greatest extent possible.

- RCWD recommends that a soil analysis be used to determine appropriate plant selection, soil amendment and irrigation scheduling. Organic soil amendments should be incorporated, as necessary, to achieve a recommended percolation rate of greater than one (1) inch per hour to avoid ponding and runoff.
Some sites such as golf courses or large landscapes will have water features and storage ponds. These ponds need to be carefully managed to avoid discharges of recycled water. They should also be monitored for algae and additional nuisances such as mosquitos and other insects.
Proper Separation Requirements

- All irrigation pressure mainline piping shall be installed to maintain ten-foot minimum horizontal, one-foot minimum vertical separation from all potable water piping, with potable on top. Where recycled water irrigation and potable water pressure piping cross, the recycled water irrigation line shall be installed at a minimum of one foot below the potable waterline.
What is a Cross Connection?

- It is the connection, be it permanent (direct) or temporary (indirect), between a drinking water system and any other source or system containing a substance that is not approved for human consumption.
Most recycled use sites will have a potable water supply also. Drinking fountains, restrooms, water features, play areas, dual served homes, are a few examples. The meter supplying the potable water must have a backflow device to prevent backflow in the event of an accidental cross-connection. These devices are required to be tested at least annually.
The Site Supervisor Role

- Ensuring that cross-connections do not occur.
- Recognizing necessary maintenance.
- Correcting system deficiencies.
- Notifying RCWD of system changes or modifications.
- Keeping current “as built” plans on site.
Site Supervisor Test

THIS SECTION WILL BE A SELF TEST TO PROVIDE QUESTIONS AND ANSWERS RELATED TO THE CONTENT INCLUDED IN THIS TRAINING GUIDE.
Question #1

Where does produced recycled water come from?

1. Rainfall
2. Small ponds
3. Highly treated wastewater
4. Large rivers and lakes
Highly treated wastewater.

- Recycled water starts as wastewater that is highly treated to meet the stringent Federal water quality regulations.
Is recycled water safe?

1. Yes, you can drink it.

2. Yes, you can use it for all approved uses listed in Title 22 of the California Code of Regulations.

3. No, recycled water has no approved uses.
Yes, you can use it for all approved uses listed in Title 22 of the California Code of Regulations.

- Title 22 lists all of the approved uses for recycled water, with the exception of drinking. (RCWD does not allow body contact)
Are there benefits to using recycled water?

1. Recycled water helps save fresh water sources.
2. For every gallon of recycled used, a gallon of potable water is saved.
3. Recycled water is less expensive.
4. Recycled water has many beneficial uses.
5. All of the above.
All of the above.

- Recycling water helps to reduce the potable water taken from groundwater aquifers and other sources. Every gallon of recycled water that is used is a gallon of fresh water that is saved.
Question #4

- All water is recycled.
  1. True
  2. False
True.

- All water is recycled when it rains or snows. Water enters the soils or runs off into creeks and rivers and as it evaporates it travels back into the atmosphere. This is called evapotranspiration. Produced recycled water through advanced treatment does what nature does, however this water is distributed to areas of beneficial uses.
Question #5

RCWD has requirements from the Regulatory Agencies that include all recycled water use sites have a _______________?

1. Landscaper
2. Site Supervisor
3. Home Owner Association (HOA)
4. Sprinkler system
Site Supervisor.
- The permit issued to RCWD requires that each recycled water user identify a Site Supervisor.
Question #6

Purple piping is used to identify what?

1. Potable water
2. Recycled water
3. Sewage
4. Compressed air
5. Gas or oil
Recycled water

- All piping is required to be purple. Purple is the color associated with recycled water piping so when it is dug up or repaired, the water contained is identified.
Question #7

- The Site Supervisor should be which of the following:
  1. The contact person for the recycled use site.
  2. The person knowledgeable in recycled water and its approved uses.
  3. The person responsible for training other staff members.
  4. The person who knows the irrigation system and plumbing.
  5. The person who has had this training.
  6. All of the above.
All of the above.

- Site Supervisors are required to become trained. They should be familiar with recycled water, how it is manufactured and the practices and procedures of its approved uses.
- The Site Supervisor is responsible for the safe and efficient uses of recycled water.
- Site Supervisors are responsible for the proper use and handling of recycled water. They are to be familiar with the plumbing and irrigation systems of their sites making sure of proper identification and signage.
- The Site Supervisor is the contact person if there is an issue found or if one arises on site. They should be readily available to assist with corrective actions to maintain site compliance.
- All recycled use sites are required to have a Site Supervisor who can train and assist other maintenance staff in the proper use of recycled water.
- Site Supervisors are required to report to the District all system failures or cross connections so mitigation procedures can be administered.
Question #8

Only the recycled water piping needs to be identified as purple.

1. True
2. False
Answer

False.

- Proper signage. This is the most commonly identified item when entering a recycled water use site. They are posted at entries and at intermittent spacing around the site.
- Sprinkler heads are required to be purple.
- Valve boxes are required to be purple.
- Quick couplers are required to be purple and are used in lieu of hose bibs. (Hose bibs are prohibited)
- Purple tagging for valve boxes and control valves.
The Site Supervisor has regulatory authority and can approve recycled water uses.

1. True
2. False
False.

- **Only the Regulatory Agencies and RCWD can approve recycled water uses.**
- **State Water Resources Control Board (SWRCB)** - Administers and enforces regulations regarding public health.
- **Regional Water Quality Control Board (RWQCB)** – Issues permits and implements State regulations.
- **Recycled Water Permittee (RCWD)** – Approves recycled water use sites, enforces regulations, inspects use sites to ensure compliance, inspects all new recycled water use sites while constructed.
Question #10

Which of the following is a true statement?

1. You can allow recycled water to pond and run off.
2. You can irrigate with recycled water any time of the day.
3. You can use a hose bib on recycled systems.
4. You can fill a pond with recycled water.
5. All of the above.
You can fill a pond with recycled water. The other answers are not approved.

- The landscape topography should be designed to capture as much nuisance water and storm water as possible, thereby avoiding off-site runoff. Some sites such as golf courses or large landscapes will have water features and storage ponds. They should be monitored for algae and additional nuisances such as mosquitos and other insects.
You can put recycled water and potable water pipes in the same trench and convey the same water in each one.

1. True
2. False
False.

- All irrigation pressure mainline piping shall be installed to maintain ten-foot minimum horizontal, one-foot minimum vertical separation from all potable water piping, with potable on top. Where recycled water irrigation and potable water pressure piping cross, the recycled water irrigation line shall be installed at a minimum of one foot below the potable waterline.
What is a Direct Cross-Connection?

1. A hard plumbed connection between a potable source of water and a non-potable source.
2. A hose or temporary connection between a potable source of water and a non-potable source.
3. Neither are considered direct Cross-Connections.
4. Both are considered direct Cross-Connections.
A hard plumbed connection between a potable source of water and a non-potable source.

- It is the connection, be it permanent (direct) or temporary (indirect), between a drinking water system and any other source or system containing a substance that is not approved for human consumption.
What is an indirect Cross-Connection?

1. A hard plumbed connection between a potable source of water and a non-potable source.
2. A hose or temporary connection between a potable source of water and a non-potable source.
3. Neither are considered indirect Cross-Connections.
4. Both are considered indirect Cross-Connections.
A hose or temporary connection between a potable source of water and a non-potable source.

- It is the connection, be it permanent (direct) or temporary (indirect), between a drinking water system and any other source or system containing a substance that is not approved for human consumption.
Question #14

- Backflow prevention devices are not required at recycled water use sites if potable water is also used.
  1. True
  2. False
False.

- Most recycled use sites will have a potable water supply also. Drinking fountains, restrooms, water features, play areas, dual served homes, are a few examples. The meter supplying the potable water must have a backflow device to prevent backflow in the event of an accidental cross-connection. These devices are required to be tested at least annually.
What is the role of the Site Supervisor?

1. Be knowledgeable in the approved uses of recycled water.
2. Be the contact person for the use site(s).
3. Know the irrigation and plumbing systems.
4. Know the rules and regulations regarding recycled water use.
5. Have a set of “as built” plans on site.
6. Notify RCWD of any modifications or changes to the water systems.
7. Be familiar with meter locations, backflow devices and system design.
8. Be able to train staff of proper handling techniques of recycled systems.
9. Monitor and address any deficiencies on the use site.
10. Immediately notify RCWD of any discovered Cross-Connections.
11. All of the above.
All of the above.

- Site Supervisors are required to become trained. They should be familiar with recycled water, how it is manufactured and the practices and procedures of its approved uses.

- Recycled water Site Supervisor certificate classes are available at Eastern Municipal Water District [http://www.emwd.org/] and at the City of San Diego at [https://www.sandiego.gov/water/recycled/switching/workshop].

- If you have any questions not answered in this training program, please contact RCWD at 951-296-6968.