

Reusing Water in Oregon

Background

DEQ's mission is to be a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water. One approach DEQ uses to protect human health and the environment, specifically water quality, is to develop programs that allow water to be reused. Water reuse, also known as water recycling, is the process of capturing and cleaning previously used water and designating it for a different beneficial purpose, such as irrigation. The quality of reused water determines how it can be used and what restrictions may exist.

The value of reusing water

Using recycled water for irrigation or other uses reduces the demand on drinkable water for uses that don't require highly treated water. Water in the environment continually moves through a repeating cycle. Here in the United States water has been captured, treated to very high standards, used for a single purpose, and then discharged to a river or stream as "wastewater."

Although this water typically contains other materials from the primary use, these other materials and the water itself are still a valuable resource. By implementing appropriate treatment and precautions, this used water can often be reused for additional purposes without adverse effects to human health or the environment. Reusing appropriately treated "wastewater" for irrigation, industrial, commercial and construction applications helps conserve water supplies and improves our surface water quality.

Types of reuse water

DEQ identifies three general categories of water for reuse:

Graywater refers to water from showers, baths, bathroom sinks, kitchen sinks and laundries. Graywater can be reused for limited activities, such as subsurface irrigation, with minimal treatment.

Recycled water refers to treated effluent from a municipal wastewater treatment facility. Oregon recognizes five classes of recycled water that can be reused for specific beneficial purposes based on various levels of treatment.

Industrial wastewater refers to treated effluent from an industrial process, manufacturing or business, or from the development or recovery of any natural resource. An example of industrial wastewater is water derived from the processing of fruit, vegetables or other food products.

Regulations controlling water reuse

Oregon first developed state regulations in 1990 to create a framework for the beneficial reuse of water that is protective of human health and the environment. Oregon now has over 200 recycled water programs across the state. From large municipalities in the Portland area to small towns in rural communities, recycled water is used for irrigation, industrial cooling, and other beneficial uses.

Permits controlling water reuse

Homeowners and small businesses can reuse graywater for toilet and urinal flushing with the appropriate plumbing permit from a local building department. Outdoor reuse of up to 1,200 gallons per day of graywater can occur by carefully planning reuse activities and obtaining a general Water Pollution Control Facility (WPCF) graywater reuse and disposal system permit from DEQ.



Recycled water irrigating plants outside an office building.

Municipal wastewater treatment facilities are required to manage and operate water reuse projects under an agency approved recycled water management plan. These plans are specific to each facility and part of a facility's National Pollutant Discharge Elimination System (NPDES) or WPCF water quality permit. DEQ reviews each plan. Based on the proposed treatment and reuse DEQ will consult with or request a full review by other state agencies such as the Oregon Health Authority, Oregon Water Resources, and Oregon Fish and Wildlife. Site-specific conditions, such as application rates, setbacks to sensitive features, signage and other limitations may be required to ensure protection of public health and the environment.

Many industrial facilities can reuse their wastewater for other purposes with minimal



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treatment, others may require more sophisticated treatment before meeting land application standards. Any industrial facility that reuses their effluent water outside of their industrial process must develop an operations, monitoring and management plan that must be reviewed and approved by DEQ before land application begins. The plan becomes an enforceable portion of their NPDES or WPCF water quality permit.

Beneficial uses

Although water reuse activities are limited to non-drinking water purposes, Oregon's regulations authorize a wide-range of uses, including irrigation of crops and pastureland, irrigation of urban landscapes (e.g., golf courses, playing fields, business parks), industrial cooling, dust control, street sweeping, and artificial groundwater recharge. Specific water reuse activities depend on the water treatment and resulting quality. More reuse activities can occur with higher-quality water.

Does recycled water put me at risk?

State regulations have been developed to ensure human health and the environment are not adversely affected by reusing water. These regulations require that each program is reviewed and approved by DEQ before water can be reused outside of the original process. They also require regular sampling and monitoring activities combined with reporting procedures to ensure each reuse program is meeting regulatory guidelines and protecting the surrounding communities.

New research is continually being conducted to determine what effects chemicals may have on human health and the environment. As a result DEQ continues to monitor and evaluate the water reuse program and stays attuned to this new science to ensure today's practices are protective of Oregon's communities and natural resources.

For more information

Contact Pat Heins, DEQ water reuse program coordinator, Portland, at 503-229-5749 or call toll-free in Oregon at 1-800-452-4011.

Alternative formats

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.



Recycled water irrigating agricultural land