

## Using Graywater To 'Green' Landscapes

New Mexico State University (NMSU; Las Cruces) researchers are testing a filtering system's ability to remove harmful substances from graywater in an effort to make the water suitable for home landscape irrigation.

"We are running out of water in New Mexico," said Ryan Goss, assistant professor in NMSU's Department of Plant and Environmental Sciences and a project researcher. "Water is clearly our most valuable resource, and anything we can do to help make our water supply more sustainable is important."

The research aims to reduce the amount of water consumed in the area and to make it easier for homes to grow plants that improve air quality and reduce cooling costs,

according to a university news release. "A family of four typically goes through as much as 100 gallons [380 L] of water a day," the release says. NMSU researchers are attempting to find out how much of this is graywater coming from bathroom sinks, showers, and washing machines and how much can be used safely for irrigation.

Goss and his colleagues are studying a water pump and filtering system that attaches to a household's wastewater line. System sensors are placed throughout the house to ensure that the pump only catches graywater. Black water from the kitchen sink and toilet is not pumped into the system, the release says.

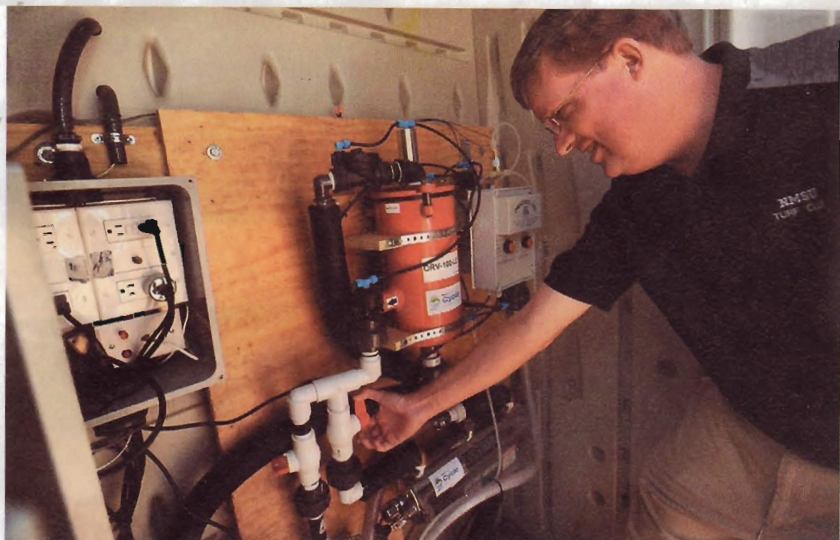
Then graywater is sent through a series of filters and

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exposed to ultraviolet light to eliminate bacteria. After being processed, the water is made available for landscape irrigation. Phosphorus and chemicals from detergents that make it through the cleaning system are actually beneficial to landscaping plants, Goss added.

"This system has many unique engineering aspects that make it immediately useful to existing and future households," Goss said. "Other systems require additional plumbing and therefore are not useful for retrofitting homes."

The system is installed at NMSU's Fabian Garcia Science Center family residence, sitting inside a small shed outside of the house. New Mexico water regulations require the treated graywater to be delivered by subsurface drip irrigation. At press time, the research group was scheduled to install a drip-irrigation system from the house to a portion of the



Professor Ryan Goss displays a water pump and filtering system that helps turn wastewater into irrigation water.

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neighboring university arboretum. According to the news release, future models may be small enough to fit inside a decorative landscape rock.