



## From septic waste to water source. System cleans water enough for use on fruit trees [print](#)

By DAVID COLLINS | The New Mexican  
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Martha Davis finds something reassuring in the shade of trees and in the substance of plants around her house and especially in walking out to pick fresh fruit. A working psychotherapist, Davis has a reasonable understanding of the difference between wants and needs.

She didn't just want landscaping. She needs the reassurance of fruit trees in her yard.

"My husband and I just moved into Eldorado this summer, and we needed a bunch of landscaping," Davis said.

Davis picked out a modest selection of eight apricot, apple and peach trees. She would not have ordered them had she not first found a way to give them the abundant water that fruit trees sometimes need. There's nothing reassuring about drought and a limited water supply threatening to turn a backyard grove into deadwood.

"It just didn't seem smart to put in a bunch of landscaping without taking into consideration that there isn't an unlimited amount of water for an unlimited number of years," Davis said.

While talking with a plumber about the failing septic system in their new house, Davis learned of the Pirana water-treatment system offered by a new Santa Fe company called Water Management Associates.

Ralph Baker of AAA Septic told her how microbes and an aeration system in the Pirana can treat septic water to make it safe to use for landscaping. Considering the water she could gain, and the potential \$5,000 cost of replacing the failing septic system, \$10,000 for the Pirana system and an underground drip-irrigation system for her new fruit trees seemed a good value.

With the Pirana, Davis can water her trees from her underground tanks even if the Eldorado Area Water and Sanitation District again imposes summertime restrictions on outdoor watering as it did earlier this year. With the completion of a new Pirana installation in her Verano Loop home this week, she will be able to use her water twice.

Multiplied by thousands of houses, that could be a lot of water savings, said Water Management Associates partner Richard Jennings, owner of the landscape design firm Earthwrights Designs. Even more savings can be found when houses share a Pirana system in a common septic tank, Jennings said. He's working with a new construction project in Pecos where clusters of three to five houses share a septic system and benefit from irrigation water recovered by the Pirana.

Jennings had been on the lookout for a system like Pirana when he first found one at a trade show about three years ago.

"I was standing there looking in my septic tank one day and I thought there's gotta be a way to treat this inside the tank," Jennings said.

He tried to get a grant to invent a solution, but that didn't work out. His ambition prepared him to recognize what he saw when he finally came across the Pirana, though. He jumped on a jet to Sonoma, where he met winemaker, microbiologist and inventor Dan Wickham.

"It occurred to him that every business that is involved in microbiology had their own brand of bugs, but septic treatment didn't," Jennings said.

Wickham's contribution to the science of in-tank septic treatment was a strain of microbes that, in well-aerated water, consume nutrients and render septic water safe for drip irrigation.

Jennings returned to Santa Fe where he and some partners started a co-op to distribute the system in New Mexico. The basic treatment system, with a pump to inject air into the water, baffles to promote bacterial growth, a holding tank and an initial supply of microbes costs about \$3,500 to \$4,000, installed. Related irrigation systems can cost at least that much and more. Required annual maintenance can cost \$200 to \$300.

Jennings envisions installing Pirana systems on a larger scale. He said installing treatment systems in individual houses throughout Eldorado could be done for far less than building a community wastewater-treatment system.

"Look at what it's going to cost to put in sewer pipe and what it would cost to put all their drip irrigation, and they would get all of their water back," Jennings said.

The cost of installing and maintaining Pirana systems could be significantly less if a large number of houses in an area all used the systems, he said. "If we did all of Eldorado it would be a lot cheaper."

Since the time he was gazing into his septic tank a few years back, Jennings and his partners have sold around a hundred of the Pirana systems and a half dozen in the Eldorado area. Jennings acknowledged that staring into septic tanks might seem odd, but in his case, his pensive contemplation of a fetid subject eventually made the experience sometimes less mephitic.

"You can open up a septic tank with a Pirana and it doesn't smell," Jennings said.

Water from the system might not smell bad, but it's still not approved for use directly on food. The water must be pumped underground to drip outlets and never used where it would come into contact with food. Fruit trees such as those Davis planted can be watered at the roots.

Learn more about the Pirana system from Water Management Associates at [www.waterma.com](http://www.waterma.com).

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