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Working to make wastewater ponds go away

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Two Napa firms have joined forces with the idea of greatly reducing the size of winery wastewater ponds, or possibly eliminating them from the valley's landscape.

Riechers Spence & Associates and Heritage Systems, both of Napa, have put their heads together and come up with a way to reuse as many as 10 times the processed wash water at wineries.

The result is Kantharos Process Water Systems, a joint venture of Hugh Linn, president of the consulting civil engineering firm Riechers Spence, and Michael Long, president of Heritage Systems Inc., a waste water specialist that provides water monitoring for wineries.

"We think we can make ponds go away," Linn said. "That technology is 50 years old."

Linn and Long estimate a 100,000-gallon winery can save half a million gallons of water per year with this technology.

Traditionally wineries use fresh water once to wash out fermentation tanks, wine barrels, crusher-destemmers and bottling lines, among other types of equipment. That water has ended up in a waste water pond or some other treatment system.

The filtration system now being tested in the area could drastically reduce the need for storage ponds and water treatment, though it would also require changes in current winery practices.

Linn said this type of filtration system has been effectively used in the chemical, food and oil processing industries.

He decided to share his idea with UC Davis Professor Roger Bolton, who said he had tried to pursue the same idea but had been unable to secure funding.

A pilot project was implemented for the filtration system at Cardinale Winery in Oakville, a property of Santa Rosa-based Jackson Family Wines.

Long estimates that a full-fledged system should be operational at Jackson's Skylane wine facility in Windsor by June.

"Jess Jackson and Barbara Banke (principals of Jackson Family Wines) had the vision to see opportunities

where others only saw problems,” Linn said. “They were willing to support our efforts to research this system.”

Linn sees this water reuse system as a key step in sustainability for many wineries so they don’t contribute to the potential lowering of the valley’s underground aquifer.

“We need to get in front of the water issue in case there is a drought situation,” Linn said.

Linn said when washing the equipment and barrels, it is essential wineries use environmentally friendly chemicals such as potassium, instead of sodium-based chemical cleaning solutions.

Linn said that for years Riechers Spence has designed pond systems for wineries and “we intuitively knew it was not a good approach.”

With the high price of land in the Napa Valley, he said, using some it for waste water ponds is costly.

“Real estate is so expensive here,” said Ryan Gregory, vice president of Riechers Spence.

A winery producing 100,000 gallons of wine a year needs a waste water pond that takes up around two acres, is 14 feet deep and has a liner as well as an aerator that burns electricity.

To build a pond costs about \$1.3 million, Linn said, plus the value of the land. It costs about \$70,000 annually to operate a waste water pond.

“We expect (wineries) to save water, eliminate or reduce waste and save energy,” Linn said of the new process. “We are not actively selling this. We want people to take a look — ‘kick the tires’ and look at the results first,” Linn said.

Long said, “We had a great team working on this. The hardest thing was looking at every scenario you could think of in a winery environment. That is where a lot of the time and effort went.”

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