

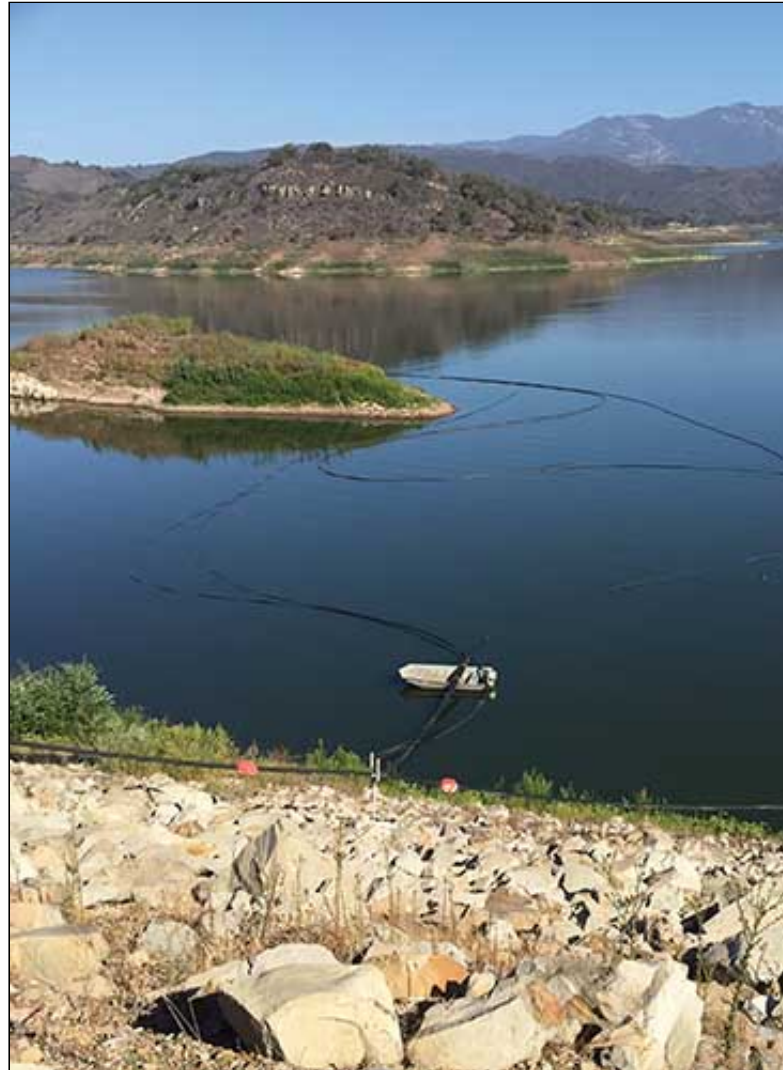
## News from around the Ojai Valley

### Oxygen process reportedly clarifying Lake Casitas drinking water



Details

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**Aeration lines run into the lake from the onshore tank.**

**Bill Warner, *Ojai Valley News* reporter**

*Photo submitted*

If the water from Lake Casitas smells a little better these days, you can thank the wonders of hypolimnetic aeration. That's another way of saying deep-water aeration, a process in which oxygen is force-fed to the warm, relatively stagnant layers in a body of water, and one of these systems is now up and running in Lake Casitas.

During the summer, some customers of the Casitas Municipal Water District (CMWD) had complained of a rather rancorous odor emanating from household water. Similar complaints came from some of the households served by other providers that bought water from CMWD.

The problem now stands to be greatly reduced if not eliminated altogether, said Ron Merckling, water conservation and public affairs manager for CMWD.

Merckling stressed that the water was safe to drink, regardless of any odor or discoloration. "All the water that's getting through the treatment plant is safe to drink," he said Tuesday. "But now the secondary quality has improved greatly."

Equipped with a temporary pressure tank, the new system effectively went online Sept. 2, Merckling said. Declines in hydrogen sulfide and manganese were noticed soon after.

"We measured 2.25 milligrams of hydrogen sulfide at the 130-foot depth on Aug. 21," he said. "At the same depth on Oct. 16, we were showing 0.1 milligrams per liter."

Similarly, 630 micrograms of manganese had been detected at that depth on Sept. 11, Merckling said. By Oct. 16, the amount of manganese had been reduced by half.

The dissolved oxygen content of the water had stood at 0.15 milligrams per liter when measured Aug. 21 at a depth of 60 feet, he said.

Measured at the same depth Oct. 21, the dissolved oxygen had risen to 8.31 milligrams per liter.

Hydrogen sulfide, he added, is mainly responsible for the bad smell, while the manganese accounts for discoloration. It's colonies of algae, though, that produce these chemicals.

Merckling said the disagreeable water tends to be a seasonal phenomenon caused by algae blooms in warm, oxygen-poor water layers of the lake. But as the water level continues to fall — the lake is

currently 44.2 percent full — the water temperature increases overall, and the oxygen level decreases in the lake's middle depth. Hence the potential broadens for the proliferation of algae.

The dam's intake gates, which under normal conditions can draw selectively from more palatable zones of oxygenated water, are now unable to do so, he said.

The solution then is the hypolimnetic aeration currently in place, approved in February by the CMWD Board of Directors. Essentially, the system consists of three long hoses connected onshore to a pressurized tank near the dam. Oxygen can be delivered to water layers at any depth throughout the lake.

"In the month of August, we had 129 customer complaints due to taste and odor," Merckling said. "In September, after the new system went in, we had eight complaints. And so far in October, we've had none."

Merckling said there is always some natural improvement in the lake's water quality during the cooling period from August through November. "But to see such dramatic improvement in the course of one month is the direct result of this system," he added. In the long run, he said, the aeration system will improve water quality and reliability, especially during the low lake levels resulting from drought.

The system was supplied and installed by Pleasanton, Calif.-based Manito Construction Inc. The project carried a \$1.2 million price tag, which CMWD has defrayed by means of a \$877,772 Proposition 84 drought grant. "We are thankful to the state for providing those funds," Merckling said. "In 2006, the Proposition 84 funding was voted on by the public to help combat the drought. So now it's trickling down, so to speak, to the local level."

Merckling said the system's permanent oxygen tank would be in place sometime in November.

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