

# WATER

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has been under construction for six years.

This fall it will start providing more than 23 billion gallons of water each year.

The only facility in the world of comparable size is Singapore's Newater plant, which borrowed employees from county water agencies and now ships its bottled water to the Orange County Water District to taste.

The camp's students, who had all written essays on their interest in water science to gain admission, showed no disgust at the water project.

As the kids were told Wednesday, treated wastewater already contributes to Orange County's water supply.

"Whether it comes from the Santa Ana River, the Colorado River or Northern California, much of the water we receive has been used before we get it," said Shivaji Deshmukh, water district engineer and finance director, as he walked the students through racks of micro filters.

The Santa Ana River, which recharges the groundwater basin, is primarily treated effluent from Inland Empire water districts during summer months. Orange County's other drinking water sources, the Colorado, Sacramento and San Joaquin rivers, also include treated wastewater.

With its new \$480 million facility, the water district will go several steps further in cleaning its own wastewater.

After standard treatment by the sanitation district, the water will flow next door, where it will pass through micro filters whose pores are roughly 1/300th the size of a human hair.

Then it will undergo reverse osmosis, which uses high pressure to force water through molecule-size holes in membranes and cull most of the dissolved salts. The technology was pioneered in Southern California.

Afterward, the water will be exposed to ultraviolet light, which destroys organic compounds small enough to make it through the reverse osmosis membrane.

At that point it will be as ready for drinking as the bottled water from Singapore.



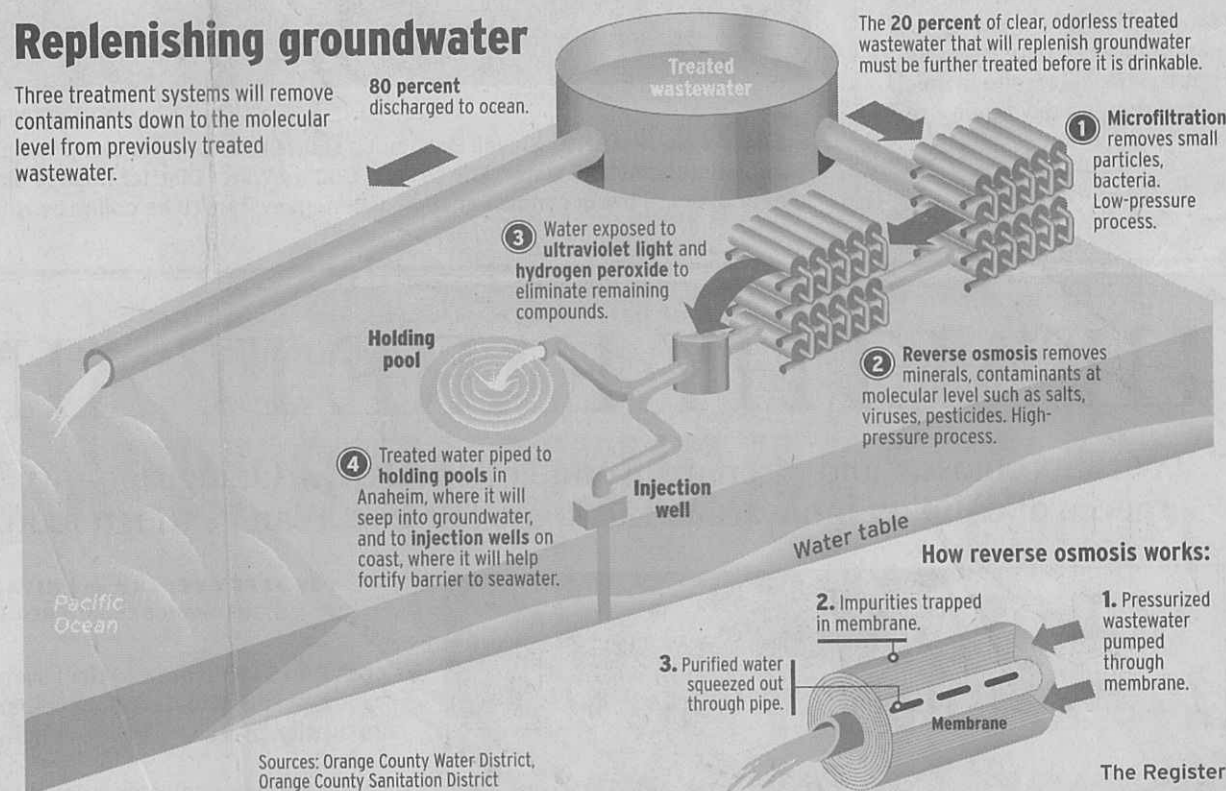
CHAS METIVIER, THE REGISTER

**OVER THE EDGE:** Students stare down into one of the microfiber filtration units. When completed, the Fountain Valley facility will provide 15 percent of the water Orange County needs.

## Replenishing groundwater

Three treatment systems will remove contaminants down to the molecular level from previously treated wastewater.

80 percent discharged to ocean.



Sources: Orange County Water District, Orange County Sanitation District

The Register

Instead of flowing straight into homes, though, discharged water will enter Orange County's groundwater basin in two places. Half will go into wells along the coast to build up the barrier against ocean water, which began seeping in as pumping in the first half of the century lowered groundwater levels.

The other half will be pumped to

the water district's ponds in Anaheim, where it will percolate into the ground. As it sinks, layers of sand and gravel will serve as an additional filter.

Jeff Tolan, 12, of Huntington Beach said anyone who feels queasy should take a more realistic view of what people consume.

"People will say they won't drink the water now that they know

where it comes from, but we should ask them, 'Do you know where hot dogs come from?'" he said.

If the system runs at full capacity, it will produce enough water each year to sustain more than 70,000 households.

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