

# ELAM: The new oil is water

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Readers can log on to [www.crwmd.org](http://www.crwmd.org) for the latest from the Colorado River Municipal Water District. Here are the sobering statistics as of this week.

Reservoir

Percent Capacity

Ivie 12.05%

J B Thomas 1.49%

Spence 2.75%

While the Permian Basin and the Eagle Ford areas of Texas are having a well deserved party since \$12 oil in 1998 and \$35 oil in 2008, there are reasons for concern.

The current boom is a result of an older technology, fracturing, brought up to date with higher pressures and more sand and, yes, water. The Eagle Ford had the highest water use of any region in the country, 19.2 billion gallons, in an 18 month period. Dimmit County used about four billion gallons of water for fracturing, more than any county in the USA.

Seventy percent of the wells in the Permian Basin are in areas of extreme water stress. Water use in both the Permian and Eagle Ford is expected to double in the next decade.

Surfing the Texas Railroad Commission website quickly reveals serious concern about this issue. Consider this comment from Texas Railroad Commissioner David Porter CPA:

Porter said population growth and drought conditions have strained water supplies in the state. "I believe securing a dedicated revenue stream to fund water projects is one of the single most important actions we can take in securing the economic prosperity of the state of Texas," he said.

The fracking boom began in 2009. This was coincident with the financial crisis and the beginning of an extended Texas drought.

In a recent speech I attended, Porter stated he thought fracturing might actually become a source of water for Texas. Let's take a look at how that might be possible.

According to Energy Water Solutions.com it takes more than 6 million gallons of water to stimulate just one well. The water injected into the formation, of course, then comes back in production. This produced water is typically hauled away and disposed of via the numerous water injection wells across both formations. New technology, however, brings a water re-cycling unit to the production site. The

produced water is treated and stored for further use. This saves the trucking cost to the disposal well, the cost of injection, and provides a renewable source of water.

Prior to 2012, a recycling permit was necessary to treat produced water. Requests grew to the point that drillers no longer need a permit from the Railroad Commission to recycle on their own lease or a third-party lease.

Some producers are re-cycling their own water. Apache Corporation recycled more than 500,000 barrels of produced water for fracturing in the Anadarko Basin. Produced water from Apache Wells is trucked to Apache's Stiles Ranch water Recycling Plant on the eastern edge of the Panhandle. Apache performs a similar effort southeast of Midland at its Barnhart facility. At Barnhart, Apache treats nearly 30,000 barrels of produced water per day.

In Irion County Apache is recycling 100 percent of its produced water. Apache calculates it costs 259 cents a barrel to treat water. Compare that to the \$2.50 per barrel cost of disposing of the water. However, Apache is using brackish water for its fracturing. Experiments continue with ultraviolet light used to remove unwanted bacteria from recycled water.

Fasken Oil and Ranch in the Permian Basin believes it will reach the goal of eliminating freshwater in its fracking operations as this column is written.

And as the Texas Water Development Board notes, Texas may have some 46 million people living here by 2060. Even if we were not fracturing, we are going to run out of water with this population growth, see reservoir statistics above.

So, where is this headed? The Texas House Energy Resources Committee considered two bills regarding recycling this past session. Simply put, the bills would have required water recycling at the states' oil and gas wells. Such legislation would require the Railroad Commission to develop rules requiring reuse of hydraulic fracturing water. Environment Texas supported the two bills. The Texas Water Recycling Association favored incentives, not mandates.

If I were guessing, the Federal EPA may hasten recycling by suggesting implementation of a Federal Rule. Just the threat of such a regulation at the national level would likely have states scrambling to get out in front of the issue so that they, not the Federal Government, would write the rules. This bears watching.