UTPB conference delves into advances as consumption rises

Volumes of water pumped into Permian Basin oil wells surge with rising oil production, and oil companies in this arid region face renewed pressure to shore up supplies and curb their reliance on fresh water.

Leaders in the oilfield water industry last week at the inaugural Permian Basin Water in Energy Conference at the Midland County Horseshoe Arena touted advances in treatment of brackish water and other alternatives to fresh water that help decrease competition with water used for drinking and irrigation. This included recycling and reusing the dirty “produced water” that emerges from an oil well.

But even with recent advances, the longer horizontal wells that oil companies drill and frack with increasing intensity require more water and overall usage continues to rise. And most produced water is still injected in underground disposal wells instead of recycled amid concerns over a link between underground disposal and earthquakes.

More than 400 people attended the conference hosted by the University of Texas of the Permian Basin, illustrating the level of interest among oil companies in developing better ways to manage fresh water supplies. The audience included representatives of private equity firms and water management companies hoping to break into a Permian Basin market for water supply and logistics.

"Hotel rooms aren’t the only commodity that’s in short supply in Midland these days," said Josh Adler, the CEO of Sourcewater, an online water exchange. "Water is the commodity that is really in short supply, and it’s going to get a lot worse.”

Water consumption by Permian Basin oil wells doubled
in 2017 to more than 60 billion gallons last year, according to data released last year the energy research firm IHS Markit that Adler cited. An average well consumes more than 20 million gallons of water.

Adler estimated the actual increase in water usage was greater and advocates a water marketplace to help oil companies secure the water volume and qualities they need.

Some of the Permian Basin's biggest players touted lofty goals to use greater amounts of produced water, which is water that seeps up to the surface through the life of a well, to reduce their reliance on fresh water supplies.

Apache Corp. set a target of produced water accounting for more than 50 percent of its overall water usage this year.

Tyler Hussey, a water resource engineer with Apache, said water demand is approaching what the company is producing, so reusing it becomes a matter of business sustainability. The ultimate goal is reusing all of it, but doing so depends on more than just technology with challenges such as transportation and concentrated usage that companies could help solve if they collaborate.

A September study from the UT Bureau of Economic Geology found there may be enough produced water to cover demand for fracking new wells, which require an average volume of water 10 times greater than they did a decade ago. But oil companies could be deterred from greater reuse of produced water by challenges such as cost, transportation and water ownership.

“Water reuse and recycling has grown a bit,” said Trace Hight, CEO of On Point Oilfield Holdings, a saltwater disposal well company in the region opening deeper wells with greater capacity. “I think there’s great market opportunity for all three of these solutions, but I agree that the majority of all this water is going to have to be disposed of in the future.”

Executives of water logistics companies argued that third parties building water infrastructure for multiple oil companies would ultimately save money and lessen risk.

“If you look over the life of a field, there is a tremendous amount of uncertainty as to what it’s actually going to cost to develop water infrastructure in that field,” H20 Midstream CEO Jim Summers said, touting a system that could deliver water and gather it for treatment or disposal from multiple oil companies. “It’s a way we can change the economics and the scale of reuse, using common delivery infrastructure.”

When oil prices crashed in late 2014, it led some oil companies to push back implementing new recycling technology or other programs aimed at water sustainability.

Pioneer Natural Resources, for example, responded by cutting investments in water supply and infrastructure to a fifth of the planned $500 million in 2015.

The company negotiated a deferment of a deal to buy treated waste water from the City of Odessa, before starting to take the water the following year. The deal is expected to net the city about $120 million over 11 years.

Now Pioneer, which is one of the largest oil producers in the Permian, is spending $135 million to build water-related infrastructure in 2018 with plans to increase usage of produced water to about 20 percent of their overall volumes, up from about 5 percent in 2017.

Pioneer is developing a field-wide water distribution system managed from a central control room. The company also reached an agreement with Midland upgrading the city’s wastewater treatment plant in return for a long-term water supply that will amount to twice as much a day what the company pumps from Odessa.

“Water is critical and as we all grow we need more of it,” said Alan Van Reet, operations manager for Pioneer Water Management, a subsidiary of the oil company. Company officials have also said the water system will cut costs per well by about $500,000 and they may eventually expand water sales to other companies. But for now, the company’s water system is meant to meet their own needs.

“It's not like we have a ton of secrets in water that each other don't have,” Van Reet said. “That said, it's a lot of capital and that capital only gets support for what we can commit to our volumes on it. We did not oversize it to preplan for a bunch of other folks water in and out of it.”

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