

Market for wastewater handling booms in line with shale growth

The wastewater handling and infrastructure market is growing thanks to the shale boom, with private equity increasingly taking an interest in participating, writes Ros Davidson

US

WHAT:

Oilfield wastewater management is increasingly attracting private equity investors and other participants.

WHY:

Rising shale oil and gas production is creating the need to manage ever growing volumes of wastewater.

WHAT NEXT:

Publicly traded companies that specialise in wastewater handling are expected to emerge eventually.

THE market for handling wastewater is booming in tandem with oil and gas in shale basins across the US, and is now worth US\$34 billion or more.

And private equity is increasingly moving in to back investment in the building of pipelines and other infrastructure for managing water in oilfields. The network could one day almost rival the oil and gas pipelines within the US' shale plays. The emergence of specialised water companies is particularly evident in the Permian Basin. Oil output in the basin – which spans South Texas and New Mexico – is expected to continue growing steadily for years to come and drilling for tight oil there yields considerable amounts of water beyond what is injected for hydraulic fracturing.

Wastewater boom

Today's high-volume fracking can produce five times as much wastewater – including water contained in the same formations as crude and gas – as tight oil in a region such as the Permian.

Nationally, the oilfield water infrastructure market is at a far earlier stage than the oil and gas gathering and takeaway capacity market, and is – so far – less competitive. But this market is growing. More water is being used in fracking, and there is more pad drilling – with several wells drilled from one pad. Injecting wastewater locally or trucking it away makes less sense because the volumes involved are so much higher.

The oilfield water infrastructure market includes the pipelines for moving the produced water from the wellhead, disposal facilities and wastewater wells, and sometimes even the recycling and resale of wastewater. The produced water can contain salt, as well as frack chemicals, excess proppant and petroleum residue.

Moving in

The wastewater infrastructure space is particularly appealing to private equity players because shale drillers – under pressure from shareholders to rein in investment – are increasingly outsourcing as they seek to monetise non-core assets.

Indeed, around 20% of the wastewater produced by the top 10 drillers in the Permian

is now being handled by outside companies. These include WaterBridge and Goodnight Midstream, the latter of which is backed by private equity firm Tailwater Capital, an East Daley Capital Advisors analyst, Chris Hapchuk, told *NewsBase Intelligence (NBI)*. The proportion of the business that is outsourced in the Permian could rise to about half by 2020-21 if the play follows the same trend as the Bakken, which is more mature, he added.

As drilling speeds up in the largest plays, drillers increasingly push the burden of water handling to third parties so that they can focus their investment on drillings and completions. "It's just more efficient for them to focus on drilling and completions," Hapchuk said.

"Producers have historically dealt with [wastewater] themselves kind of out of sheer necessity and bought or acquired pipelines, disposal wells," said a Bracewell partner, Lytch Gutmann, who advised Halcón Resources and Concho Resources on their deals with WaterBridge. "But those aren't generally their core assets. These are upstream oil and gas drillers and explorers," she told *NBI*.

Saltwater disposal company Goodnight's CEO Patrick Walker told Bloomberg late last month: "We've got three times the volume and 1/10th the number of competitors" as private equity players in the oil and gas midstream market. "It's a good place to be."

Private equity push

Recent deals have highlighted this trend of private equity entering oilfield water handling. In January WaterBridge was backed by Houston-based private equity firm Five Point Energy when it bought assets in the southern Delaware Basin – a sub-basin of the Permian – from COG Operating, a Concho subsidiary. The acquired infrastructure included three disposal wells with 45,000 bpd of permitted capacity and roughly 44 miles (71 km) of pipeline.

WaterBridge anticipates that it will eventually own and operate the largest integrated water management network in North America.

Backed by the same private equity firm, WaterBridge previously purchased all of the water infrastructure assets owned by shale

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- driller Halcón, including 60 miles (97 km) of water-gathering pipelines, 10 water disposal facilities with total permitted capacity of 120,000 bpd, freshwater wells and water recycling facilities.

WaterBridge has also agreed to buy the southern Delaware Basin water infrastructure of NGL Energy Partners, including nine water disposal facilities and around 10 miles (16 km) of pipeline. Tulsa-based NGL remains diversified in the midstream sector, retaining a sizeable water business as well as an oil and gas pipeline business.

What next?

Most of the US' growth in tight oil production is occurring in the Permian, where private equity-backed water-handling deals will continue to flourish. "In the Permian alone, there's a market for half a dozen new billion-dollar companies in the midstream water space," the Produced Water Society's president, Steve Coffee, told *NBI*. "There are many of these billion-dollar deals in the making." An estimated 16 million bpd of water are produced in the Permian alone, according to Coffee.

The trend is evident in other plays as well. In December, a joint venture between a subsidiary of Hess and private equity firm Global Infrastructure Partners (GIP) acquired Hess' existing Bakken water services business in North Dakota for US\$225 million in cash. The price tag was fairly typical for a wastewater infrastructure deal, and a drop in the ocean for GIP, which manages over US\$51 billion for its investors.

According to IHS Markit, the water demand for US drilling and completions grew by over 30% year on year from 2017 to 2018. This was driven mainly by an increase in frack water volume requirements in 2018 across most onshore US basins, an IHS Markit spokeswoman told *NBI*. And frack water intensity is anticipated to keep growing in the years ahead owing to advances in completion designs, greater proppant intensity and longer lateral lengths.

The consultancy has estimated that the US oil and gas industry – both onshore and offshore – spent US\$34 billion on water management in 2018, with over one-third, or US\$12 billion, invested just in the Permian alone. IHS Markit estimates that water management spending in the Permian will rise to US\$14 billion this year

and to US\$19 billion in 2023, accounting for over 50% of onshore US water demand for onshore oil and gas operations.

Meanwhile, Rystad Energy research projects that US demand for frack water treatment will have doubled from 2016 levels by 2020. The Permian is predicted to see particularly substantial treatment growth surpassing 800 million barrels by 2021. Rystad anticipates that with produced water in the Permian increasing by a third by 2021, there will be local disposal constraints, but at a macro level spare disposal capacity will remain.

"Water disposal is not currently an issue across the Permian as a whole, but some operators are having local difficulties. We expect the water disposal market in 2021 will be tighter due to significant water production increases from the Permian-Delaware. More infrastructure would be needed beyond 2021," said Rystad's senior vice president, Ryan Carbrey, in a statement.

The water infrastructure market has been niche, but it is growing fast. And the recent spate of deals is just the beginning. "The sheer volume of water boggles the mind," a Riveron Consulting executive managing director, James Lee, who has advised private equity firms on entering the wastewater infrastructure market, told *Bloomberg*. "We'll be talking about this issue for several years," he said.

Bracewell's Gutmann told *NBI* that there was a lot of private equity money out there to invest in water handling, but that she thought that publicly traded companies that specialise in this would emerge eventually.

And if Permian output grows faster than expected once new crude takeaway capacity comes online, the water-handling and infrastructure market could also grow more rapidly than previously anticipated.

Indeed, a new water-handling move was announced on February 5. Blackstone said that funds managed by Blackstone Energy Partners had formed Waterfield Midstream. It described Waterfield as "a full-cycle provider of water management services, including water gathering, treatment, recycling and disposal", to provide serve producers in the Permian Basin. The move illustrates growing private equity interest in water management, and appears to be a sign of things to come. ❖

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