Have It All — Midland Crude Oil Gathering and Shuttle Systems

Smaller-Diameter Networks Expanding to Keep Pace with Permian Growth

- **The Permian as a whole has been leading U.S. crude oil production growth since mid-decade; production now tops 4.2 MMb/d and is likely to surpass 5 MMb/d in early 2020.**
- **The Permian's Midland Basin accounts for about 2 MMb/d of the total, and Midland output is forecasted to increase to nearly 2.9 MMb/d by 2024.**
- **Drilling-and-completion activity has been spurring the expansion of existing gathering systems and the development of new ones; larger-diameter shuttle pipelines have also been added.**
- **These systems provide reliable and cost-effective delivery of crude from the lease to takeaway pipelines, and optimize shippers' destination optionality.**
- **With the flexibility to send their crude to multiple destinations — the Cushing Hub, as well as Gulf Coast points such as Houston and Corpus Christi — shippers can earn higher netbacks.**

1. Introduction

Crude oil production in the Permian Basin now exceeds 4.2 MMb/d, and new pipeline takeaway capacity out of the region is coming online to address long-standing constraints and to support continued growth in Permian output in 2020 and beyond. Just as important, a number of midstream companies have been developing and expanding crude gathering systems, storage capacity and shuttle pipelines within the Permian. These gathering systems, which vary widely in mileage, geographic reach and producers served, have two primary purposes. One is to transport crude oil from the lease to larger-diameter pipes downstream more efficiently and cost-effectively than by truck. The other is to offer producers and shippers the ability to move crude to interconnections with several takeaway pipelines that flow to multiple markets such as the Cushing, OK, hub, the Houston area, and Corpus Christi. With this destination optionality, they can sell their crude into the market or markets that offer the best netback.

In turn, shuttle pipelines connect gathering systems in often remote production areas to key West Texas hubs, such as Midland, Crane and Wink, where crude can flow onto long-haul takeaway pipelines to Cushing and the Gulf Coast. As for crude storage capacity, it plays an important role in balancing flows on gathering, shuttle and takeaway pipelines, and in segregating different types of crude oil.

Due to the efficiency and cost-effectiveness they provide, crude gathering systems handle the vast majority of the crude produced in the Permian's Midland and Delaware basins; generally speaking, the use of tanker trucks to move crude oil to downstream pipelines is limited to wells that are too remote, that produce too little crude to justify the investment in a gathering system, or that are new and have not yet been connected to a nearby system.

Several types of entities are involved in developing crude oil gathering systems, including producers themselves and midstream affiliates of producers. In other cases, producers partner with unaffiliated midstream companies to help them develop systems to meet their crude-gathering — and, often, the gathering needs of producers with wells close by. And sometimes, individual midstream companies or joint ventures of two or more such firms pursue the development of gathering systems in areas where drilling activity is intensifying — in these cases, the midstreamer or midstreamers would often seek to line up an "anchor" producer to jump-start the project, then work to sign on additional producers in the same area.

The ownership of crude gathering systems and other midstream assets within the Permian has also evolved over time. In many instances, the systems have been expanded through a combination of organic growth and acquisitions, often with the involvement of new midstream companies backed by private equity. As some of these systems grew, established good relationships with producers, and increased their fee-based revenue streams, they became attractive targets for acquisition themselves.

In this, the first part of a two-part Drill Down Report on Permian crude oil gathering systems, we will focus on representative systems within the Midland Basin; Part 2 will look at systems in the Delaware Basin.

The Table of Contents for "Have It All — Midland Crude Oil Gathering and Shuttle Systems" is included on the following page.

Table of Contents