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## North Dakota Crude-by-rail Players Adjust Strategies as Dakota Access Crude Pipe Work Continues

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## North Dakota Crude-by-rail Players Adjust Strategies as Dakota Access Crude Pipe Work Continues



The construction of Energy Transfer Partners' Dakota Access crude pipeline will result in reduced crude-by-rail shipments from North Dakota, causing rail shippers and investors to adjust to an altered Bakken shale transportation landscape, according to market sources.

### SANDPIPER CANCELLATION PUSHES DAPL TO FOREFRONT

The Dakota Access pipeline is set to alter infrastructure and logistics from the Bakken, as Enbridge Energy Partners' plans for the Tioga, ND, to-Clearbrook, MN, Sandpiper pipeline project were suspended on Sept. 1 when the company announced that it will be withdrawing regulatory applications pending with the Minnesota Public Utilities Commission. Enbridge said that it completed a review of the project and concluded that the 250,000 bpd pipeline project, which was expected to come online by the end of 2019, "should be delayed until such time as crude oil production in North Dakota recovers sufficiently to support development of new pipeline capacity," the company said in the release. The change of plans with Sandpiper comes after Enbridge and Marathon Petroleum announced on Aug. 2 a joint venture in which it was going to invest in Energy Transfer Partners/Sunoco Logistics Bakken Pipeline System, which includes the 470,000 bpd Bakken-to-Patoka, IL, Dakota Access crude pipeline and the 470,000 bpd Patoka-to-Nederland, TX, Energy Transfer Crude Oil Pipeline.

The 470,000 bpd Bakken-to-Patoka, IL, pipeline is expected to start-up by the end of the year, and could edge out many of the crude barrels currently moved on rail from North Dakota. The so-called DAPL is to tip the takeaway and production balance in the state toward an oversupply of outbound capacity.

If the pipeline comes online in November, North Dakota takeaway pipeline and refinery capacity will increase to 1.323mn bpd compared with Bakken production in North Dakota and Montana at 1.04mn bpd, according to Genscape.

A Dakota Access spokesperson did not respond to requests for comment on potential delays due to ongoing protests and litigation. Market sources have said that they are unsure when the pipeline will begin service.

### CRUDE-BY-RAIL FACILITY OWNERS SEE PIPE ADVANTAGE

Faced with this new capacity, several crude-by-rail facility and pipeline owners in the Bakken region are making plans to tap into growing pipeline takeaway, while preparing for lower demand for train loadings.

Leading North Dakota crude-by-rail terminal owner Crestwood Midstream Partners announced in a second quarter earnings call preparation plans ahead of DAPL startup. The company plans to provide storage and blending options for shippers and also connect its 160,000 bpd COLT rail terminal in Epping, ND, to the nearby Dakota Access terminal. A Crestwood official declined comment on when the connector pipeline is expected to be completed, but a source close to the situation said that its completion is anticipated to be done by November or December.

Additionally, Crestwood will connect its 125,000 bpd Arrow gathering system to the Dakota Access terminal in Johnson's Corner in McKenzie County.

Johnson's Corner is an emerging pricing hub for Bakken in North Dakota. Similar to the Beaver Lodge/Ramberg-area, Johnson's Corner is near much of the current production and rail terminals in the state, making it a prime location for a DAPL terminal.



### COURT CASES, FEDERAL DECISIONS SLOW DAPL WORK

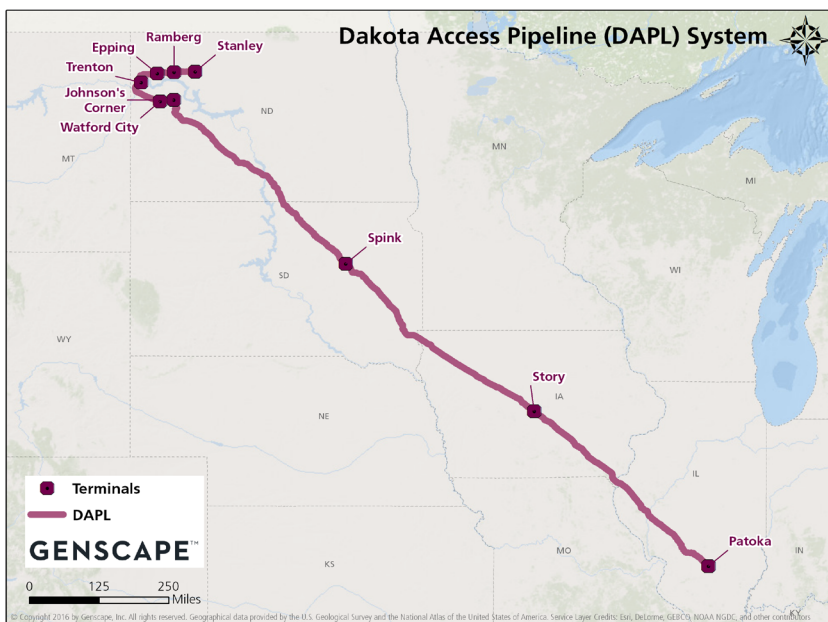
The U.S. Court of Appeals for the District of Columbia Circuit removed a temporary injunction on Energy Transfer Partners' Dakota Access pipeline Oct. 9, allowing construction to resume near Lake Oahe, the order from the court clerk said. The unanimous decision by the three-judge panel allows work to continue within 20 miles of Lake Oahe on the Missouri River in southern North Dakota, after the court previously ordered work to stop while it considered the motion filed by the Standing Rock Sioux and Cheyenne River Sioux tribes against the U.S. Army Corps of Engineers and Dakota Access seeking to halt work on the pipeline, the order said. The court said in that ruling that it halted work because it needed ample time to consider the emergency injunction appeal from the Standing Rock Sioux tribe. The tribe filed the appeal after U.S. District Court Judge James Joasberg denied a motion Sept. 9 against the U.S. Army Corps of Engineers as it sought to halt work, saying that the Corps did not engage in tribal consultations under the National Historic Preservation Act. Shortly after Judge Joasberg's decision, the Department of Justice, the Department of the Army and the Department of the Interior released a statement saying that work on the U.S. Army Corps of Engineers' land must be halted. In the statement, the Army said it "will not authorize constructing the Dakota Access pipeline on Corps land bordering or under Lake Oahe until it can determine whether it will need to reconsider any of its previous decisions regarding the Lake Oahe site under the National Environmental Policy Act (NEPA) or other federal laws."

Despite falling rail loadings in recent years in North Dakota, volumes at Crestwood's COLT terminal have persevered and remained high, averaging 106,000 bpd in August, and 92,000 bpd in January, although lower than the 134,000 bpd peak in June 2015, Genscape data showed.

Thirty miles southwest from the COLT terminal, Savage Services is moving forward with a pipeline to tie in its 175,000 bpd crude-by-rail terminal in Trenton, ND, to DAPL, according to a Savage spokesman on Aug. 19. A proposed nine-mile, 60,000 bpd pipeline will connect to the nearby Dakota Access terminal in Trenton. No additional information was released following a binding open season for the connector pipeline which commenced on May 11 and ended on June 8. A spokesman for Savage declined comment on the outcome of the open season.

Rail volumes loading at Savage's Trenton facility have also remained relatively high despite the downturn in rail volumes, as the terminal averaged 70,000 bpd in August, and 75,000 bpd in January, but down from its peak in August 2015 at 98,000 bpd, according to Genscape.

Additionally, a pipeline from the Bakken crude producer Hess' 140,000 bpd bpd Tioga, ND, terminal to Dakota Access' Ramberg terminal in Williams County, ND, is under construction, according to a Hess spokesman on Aug. 25. The spokesman declined comment on specifics of the connector line, but said, "Hess has a subscribed capacity of 50,000 bpd" on Dakota Access. The company is not providing a completion date for the connector pipeline, but is expecting it "to be completed when DAPL comes online," the spokesman said.



The Ramberg/Beaver Lodge area is a vital pricing point for Bakken close to the wellhead, with multiple rail terminals and gathering systems, in addition to being on Enbridge's North Dakota pipeline system.

Loaded rail volumes at Hess' facility in Tioga averaged 46,000 bpd in August, up from 25,000 in January, but down from its high point of 61,000 bpd in April 2015, Genscape data showed.

Meanwhile, integrated Bakken shale player Tesoro has plans to connect its 240,000 bpd High Plains pipeline system and its 100,000 bpd BakkenLink Great Plains pipeline with the DAPL system. High Plains is expected to link to the Ramberg terminal, while Bakken Link will connect at Johnson's Corner, a company spokesman said. Both projects are in the construction phase and are to be completed by the end of the year, the spokesman said.

But, there are currently no public plans for Tesoro to connect its Fryburg, ND, terminal to the pipeline, according to Justin Kringstad, Director of the North Dakota Pipeline Authority. The terminal is southwest of many other Bakken terminals and in farther proximity to DAPL, and rail loadings at the terminal are expected by the company to remain healthy to the U.S. West Coast, a source said.

Rail volumes at the terminal are expected to remain unchanged from current levels with a "very high utilization rate," Tesoro CEO Gregory Goff said in a second quarter earnings call. Rail loadings at the Fryburg terminal have remained resilient this year, as it averaged 52,000 bpd in August and 54,000 bpd in January, and with the high water mark for loadings coming in May at 68,000 bpd, according to Genscape data.

Due to relatively weak crude prices, crude-by-rail transportation costs are expected to decline by as much as 40 percent to Tesoro's refinery in Anacortes, WA, he said. "We are very confident that ... the movement of Bakken crude oil by rail to the Pacific Northwest will be very competitive with pipeline shipments out of North Dakota," Goff said.

Sacagawea Pipeline Company, a joint venture between Phillips 66, Paradigm Energy Partners and Grey Wolf Midstream, is also planning to forge a pathway to DAPL, according to documents on the North Dakota Public Service Commission's website. The company is constructing a 70-mile bi-directional connector pipeline from Paradigm's Keene Crude Oil Terminal in McKenzie County, ND, to Phillips 66's Palermo rail facility in Mountrail County, ND. The Palermo facility will have an eight-mile pipeline connecting to the Dakota Access terminal in Stanley, ND. A 1.3-mile connector pipeline is also being built to Johnson's Corner from the Keene terminal. The pipeline system is expected to startup in the third quarter of this year, Phillips 66 said in a second quarter earnings call.

Enbridge's 80,000 bpd rail facility in Berthold, ND, will not connect directly to DAPL, but it is connected to Enbridge's 210,000 bpd Plentywood, MT-to-Clearbrook, MN, North Dakota Pipeline System, which is expected to connect at the Ramberg terminal, Kringstad said. A specific timeframe for the connection was not given by Kringstad.

While several companies are adjusting operations to profit from DAPL, there are currently no public plans for connections to the Dakota Access pipeline from many crude-by-rail facilities.



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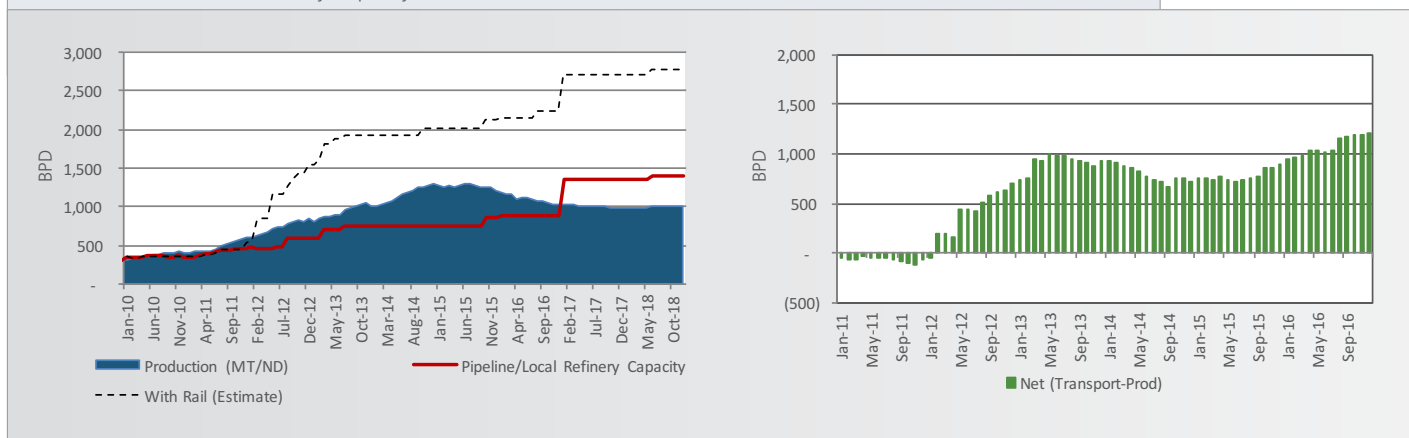
These include EOG Resources' 75,000 bpd Stanley, NorthStar's 100,000 bpd East Fairview, Lario's 200,000 bpd Dickinson and Dakota Plains' 80,000 bpd New Town terminals, nor Global's 80,000 bpd Beulah and 80,000 bpd Stampede, and Plains All American's 65,000 bpd Van Hook and 65,000 bpd Manitou facilities, Kringstad said. Company officials for the terminals could not be reached to comment.

There are also no plans for a connection between Musket's 60,000 bpd Dore facility and Dakota Access, according to a source close to the situation. A spokeswoman for Musket declined comment.

## PIPELINES TRAIL RAIL CAPACITY, BAKKEN PRODUCTION

Crude by rail in North Dakota emerged as the predominant method of transporting crude from the state to the refining hubs in the country. Then, investors looked to benefit from the booming Bakken production amid a lack of pipeline infrastructure in the region. At its peak in December 2013, 73 percent of crude production in North Dakota was shipped by rail, while 20 percent moved via pipeline, according to the North Dakota Pipeline Authority. Since then, increased pipeline connectivity and less favorable economics have cut into rail shippers' profits.

Bakken Production and Takeaway Capacity



A decline in global oil prices in part caused Bakken production to fall. Bakken output peaked at 1.308mn bpd in December 2014, according to Genscape. In recent years, crude-by-rail arbitrage opportunities grew unfavorable as price spreads between inland crudes and coastal refining centers narrowed. The benchmark spread between West Texas Intermediate and Brent crudes – a leading industry marker of crude-by-rail shipping profitability – was around \$1.80/bbl in early September, from about \$0.46/bbl in early January 2016 and \$3.73/bbl the same time a year prior, and down from about \$12.34/bbl early in January 2014.

In September, combined Bakken production in Montana and North Dakota was about 1.065mn bpd, with outbound pipeline and local refinery capacity at about 853,000 bpd, according to Genscape. Of the 1.678mn bpd of rail loading capacity, the vast majority was underutilized, but necessary to balance production and takeaway capacity. The monthly average loading volumes at monitored terminals in North Dakota were 306,000 bpd for August, Genscape data showed. In March 2014, rail volumes peaked an average of 585,000 bpd, according to Genscape.

The startup of Dakota Access will compound the issues facing rail shippers, said Carl Evans, Senior Crude Oil Analyst for Spring Rock. “While it won’t happen overnight, we think (crude-by-rail) will continue its downward trend alongside production declines, but that there will always be some sticky bbls that continue to go east to PADD 1,” he said.

## CRUDE BY RAIL TO FIND PLACE AMID PIPE

Although volumes of crude shipped by rail will decline as Dakota Access comes online and term rail shipping contracts expire, barrels will still move on trains to regions with low pipeline connectivity, market sources said. Refiners on the U.S. East and West coasts have limited options for sourcing domestic crude, as most of the pipeline development spurred by the so-called U.S. shale revolution pointed to the refinery-rich Gulf Coast.

### CONSTRUCTION CONTINUES TO PROGRESS ON THE DAKOTA ACCESS PIPELINE, ACCORDING TO GENSCAPE AERIAL IMAGES TAKEN ON SEPT. 8.

#### North Dakota pumping stations:

- **Stanley:** Pump installation was incomplete at the Stanley pumping station, which is the origination of the Dakota Access pipeline. Two storage tanks are nearly complete, with cleared land next to the tanks, likely to prepare for connectivity to the pipeline once installed.
- **Ramberg:** Land has been cleared near the Ramberg terminal but pipe remained to be installed. Trenching was observed beneath road intersections near the terminal, which has only had land cleared and two smaller storage tanks had been installed.
- **Epping:** Land clearing along the right-of-way and trenching under road intersections were observed near the terminal in Epping. At the site of the terminal, only land clearing has been completed.
- **Trenton:** Two storage facilities were nearing completion at the Trenton facility, with land clearing and trenching on the way to the terminal. Piping material was observed as the line proceeds.
- **Watford City:** Strung piping material was observed leading to the Watford City terminal, with three storage tanks under construction. Near Lake Trenton, crews were observed trenching under the lake from both sides.
- **Johnson’s Corner:** Two storage tanks at the Johnson’s Corner terminal were near completion, but neither had pipeline connectivity. The right-of-way to the facility and onward toward Lake Oahe on the Missouri River has been completed.

#### Rest of Route:

Pipe stringing and land clearing continued until it ends roughly two miles from northwest of Lake Oahe, and no construction crews were observed. South-east of the lake, cleared land resumed until trenching activity and strung pipe began about eight miles from the lake. Work along the right-of-way from North Dakota to Illinois is also moving along, according to the aerial images. In South Dakota, there are intermittent stretches of cleared land and trenching while three pumps at the pumping station in Spink are nearly fully installed as of Sept. 8. Three pumps are also nearly installed at the Story pumping station in Iowa, and with strung pipeline observed within the cleared right-of-way to and from the station. As the path of the pipeline approaches the Mississippi River at the Illinois border, a significant amount of connected, but unburied pipeline was observed. In Illinois, there is intermittent clearing and trenching activity en route to Patoka. A large staging area about 98 miles northwest of the storage field in Patoka was observed with a significant amount of piping on-site. Another staging area for piping material was observed at Patoka, with exposes pipeline indicating that it was nearly connected to the storage tanks.

Crude-by-rail to the West Coast could prove resilient after DAPL, due to its closer proximity to the Bakken, a market source said. “If any crude by rail survives, it would be to the West Coast. It’s close, BNSF has a direct line and they should be interested in reducing (freight) rates,” he said.

Rail unloadings at East Coast terminals have continued while arbitrage opportunities narrowed and refiners increasingly imported relatively cost-effective foreign grades. Unloadings at monitored East Coast terminals in August averaged over 109,000 bpd, despite declines in Bakken production and less crude by rail loading volumes, according to Genscape. In August 2015, railed-in volumes to the East Coast were over 177,000 bpd, but that is without volumes from Phillips 66’s Bayway refinery in Linden, NJ, with monitoring beginning July 2016.

Meanwhile, waterborne unloadings on the East Coast increased 131,367 bpd year-on-year, with volumes at 654,984 bpd in August.

“Rail has the ability to move to the East and West Coast, which is hard, if not impossible, to get there by pipe,” said Jodi Quinell, Genscape oil product manager. “If for some reason those become ‘premium’ markets again, and there is a large spread between Bakken and East and West (coasts), and not the Midcontinent/Gulf Coast, that could incentivize producers to move barrels from pipe back to rail.”

In order for coastal refiners to shirk significant volumes of waterborne barrels, there would need to be a wide spread between Bakken and ICE Brent crudes. To rail barrels to the East Coast in the future, shippers would be looking for a \$13-14/bbl Bakken-Brent spread, and a \$9-\$10/bbl spread to the West Coast, she said.

The Bakken Railhead/ICE Brent spread was assessed on Oct. 10 at \$5.27/bbl, and has averaged \$5.06/bbl so far in 2016, according to Genscape’s data.

However, until the Dakota Access pipeline is up and running, crude-by-rail will remain a necessary fixture for production from the Bakken. Interest in barrels to be loaded onto trains persists as market players wait to switch their focus to pipeline barrels, according to market sources. The pipeline is more than 60 percent completed, with construction continuing in all four states along the route, except for “very small portion” in North Dakota, a company spokeswoman said on Sept. 20.

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