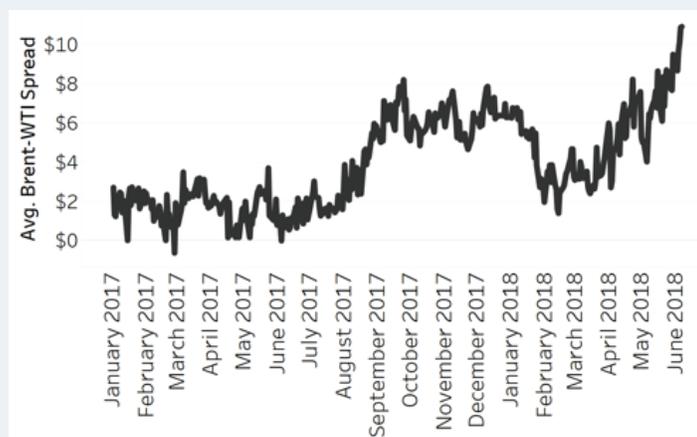


MARKET PRICES INCENTIVIZING CRUDE BY RAIL

Since late 2017, the oil industry has experienced a series of events causing the two most watched oil price markets diverge from one another once again. West Texas Intermediate or “WTI” pricing indicates the market value at Cushing, OK. Brent crude oil is the leading market indicator for global light, sweet crude oils. The price difference between these two markets is known as the Brent-WTI spread and sits just over \$10 per barrel in mid-June 2018. This spread in market values has been shown to drive marketing and transportation decisions for crude oil leaving North Dakota. When Brent markets are at least \$5-7 per barrel higher than WTI, North Dakota has historically experienced an increase in the utilization of crude by rail.



The utilization of crude by rail has decreased from an estimated peak in 2014 of over 800,000 barrels per day to a late-2017 estimated low of just over 100,000 BOPD. The 2014-2017 decrease in crude by rail movements from North Dakota was driven by decreasing regional production, increased pipeline capacity, and a relatively low market incentive due to a narrow Brent-WTI spread.

Since late 2017, North Dakota has experienced an uptick in crude by rail movements from the region. In April 2018, the Pipeline Authority estimates crude by rail from North Dakota was roughly 280,000 barrels per day.

With Dakota Access Pipeline going into service last year, North Dakota currently has enough capacity to theoretically move 100% of the oil to Midwest and Gulf markets via pipeline. The current increase has been primarily the result of market forces incentivizing deliveries of Bakken crude oil to the east and west coast refining centers that do not have pipeline access to domestic crude oil sources.

By the first half of 2019, North Dakota oil production is expected to outpace pipeline capacity once again. Once production exceeds the 1.37 million barrels per day of pipeline capacity, the use of crude by rail will transition from elective, and market driven, to required. Industry participants are actively pursuing additional pipeline capacity for future production growth. Two such projects include Energy Transfer Partners seeking shipper commitments to expand the Dakota Access Pipeline and TransCanada’s proposal to move North Dakota crude oil on the Keystone XL pipeline from an injection point near Baker, MT.

In the coming decades, North Dakota is forecasted to produce 2-2.4 million barrels per day. Oil production at the forecasted levels would require pipeline expansions beyond the proposed Dakota Access Pipeline expansion and Keystone XL’s Baker, MT onramp. For the remainder of 2018, it is expected that crude by rail volumes will continue to increase as result of market forces and in 2019 and beyond until additional pipeline capacity is added.

**INDUSTRIAL COMMISSION OF
NORTH DAKOTA PIPELINE AUTHORITY**

www.pipeline.nd.gov

Governor
Doug Burgum

Attorney General
Wayne Stenehjem

Agriculture Commissioner
Doug Goehring

Director
Justin J. Kringstad

NORTH DAKOTA — Production Numbers

Average Daily Oil Production, BOPD

Feb. 18	Mar. 18	Apr. 18
1,175,338	1,162,134	1,224,948

Average Daily Gas Production, MMCFD

Feb. 18	Mar. 18	Apr. 18
2,107	2,120	2,242

Average Rig Count

Feb. 18	Mar. 18	Apr. 18
57	59	60

As of June 19, 2018, there are 61 active rigs in North Dakota.

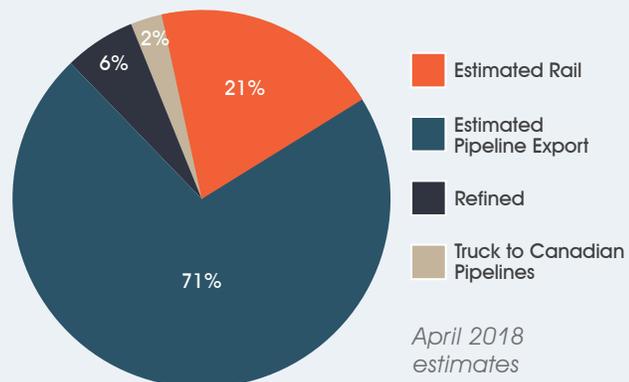
North Dakota Pipeline Authority

State Capitol, 14th Floor
600 E. Boulevard Ave. Dept. 405
Bismarck, ND 58505-0840

FACTOID

At the peak of crude by rail movements from North Dakota, there were at least 22 facilities loading rail cars for shipment. Facilities ranged from sophisticated unit train facilities with pipeline and truck receipt options to small facilities that would use simple transfer pumps to unload truck deliveries into rail cars. It is estimated that at time of writing, only eight facilities are still actively loading crude oil for shipment.

Estimated Williston Basin Oil Transportation



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