Condensate Splitters Not Immune to Coronavirus

Plants don't benefit from pandemic conditions.

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Sandy Fielden
Director, Oil and Products Research
+1 512 431-8044
sandy.fielden@morningstar.com

Data Sources for This Publication
EIA
CME Group
Argus Media
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Margins Worse

Seven years ago, in 2013 Eagle Ford condensate prices averaged a nearly $15/barrel discount to regular Gulf Coast crude rival Light Louisiana Sweet, because domestic refiners couldn't easily process such ultralight crude. The big discounts encouraged midstream companies to build standalone condensate splitters to process growing volumes of condensate being produced in the South Texas Eagle Ford shale basin. Splitters break condensate into component fractions such as liquid petroleum gas, naphtha, distillate and fuel oil that can be further processed or blended into finished products. Today six splitters are operating in the Gulf Coast region with over 300,000 thousand barrels/day capacity. Given that they are simpler plants than sophisticated Gulf Coast refineries, they should have operating advantages in this year's coronavirus conditions, but by our estimate their margins are worse. This note reviews splitter performance in 2019 and 2020.

The first purpose-built splitter of the shale era was Kinder Morgan's Houston's Ship Channel plant that came online in mid-2015. The 84 mb/d plant is leased to BP North America under a long-term tolling agreement. Many similar projects were on the drawing board or being built at the same time. The rationale behind the splitters was that rapidly rising Eagle Ford condensate production would remain relatively cheap because traditional Gulf Coast refineries were not configured to process such light material and federal regulations banned the export of crude and condensate, thereby leaving it stranded in Texas. In September 2016, we reviewed the first year's performance of Kinder Morgan's plant–finding it already underutilized because condensate prices had increased relative to LLS crude after shale production tanked in 2015 (see Kinder Morgan Splitter). The lifting of the crude export ban in December 2015 further reduced condensate discounts by opening up Eagle Ford crude to international markets. Nevertheless, splitters such as Kinder Morgan's continue to run and we estimate 329 mb/d of capacity is currently online at six plants in the Gulf Coast region (Exhibit 1).

Of the six plants, four are operated by midstream companies that contracted out capacity to trading companies (more on these below). Of the other two, the first is the 74 mb/d BASF/Total splitter. This is a legacy unit operating as part of a larger refining and petrochemical complex in Port Arthur, Texas, since 1970. The second is the privately operated 25 mb/d Petromax splitter, owned by Bayview Refining Company, a joint venture between Sunoco Logistics (part of Energy Transfer Equity) and an unidentified private equity partner. Petromax has secured long-term contracts to supply diesel and jet fuel to the U.S. Department of Defense that are met from splitter output.

Exhibit 1 Gulf Coast Condensate Splitter Capacity

Company / Contract	Location	Operating Capacity (mb/d)
BASF/Total	Port Arthur, TX	75
Magellan/Trafigura	Corpus Christi, TX	50
Buckeye/Trafigura	Corpus Christi, TX	60
Kinder Morgan/BP	Galena Park, TX	84
Petromax Refining	Houston, TX	25
Targa	Channelview, TX	35
	Total	**329**

Source: Company reports, Morningstar.

The four remaining splitters were built between 2015 and 2018–two in the Houston area and two in Corpus Christi. As mentioned, the 84 mb/d Kinder Morgan Houston splitter, that consists of two 50 mb/d units, is contracted to BP and fed with Eagle Ford condensate via Kinder Morgan's Crude and Condensate pipeline. BP appear to have successfully found markets for the splitter output among Houston area refineries, export customers and the BP Group trading operation. According to Texas Railroad Commission reports, the Kinder splitter was run at full capacity throughout 2019 (the latest available data).

The second Houston splitter, a 35 mb/d plant owned by Targa Resources at Channelview in the Houston Ship Channel, was completed at the end of 2018 and it's unclear whether it's currently operating. The plant's full capacity was originally contracted to trader Noble Americas for seven years under a processing agreement signed at the end of December 2015. In January 2018, Vitol US Holding Co. acquired Noble Americas and with it the agreement. According to Targa, the plant was completed after some delays at the end of 2018 but not before Vitol terminated the tolling contract, citing Targa's failure to meet completion deadlines. Vitol is currently suing Targa in Houston's Harris County District Court for the return of upfront payments totaling $129 million that Noble and Vitol made under the 2015 contract. Targa denies any obligation to return the payments.

The two Corpus Christi splitters operate under similar tolling arrangements to the Kinder Morgan/BP and Targa/Noble deals. Trafigura originally built the first plant in Corpus themselves but subsequently sold an 80% stake to Buckeye Partners, a midstream pipeline and terminal operator owned by private equity firm IFM Investors. Trafigura signed a multiyear processing deal with Buckeye committing to the full 50 mb/d plant capacity. Railroad Commission records indicate that the plant operated at full capacity in 2019. Trafigura also has a multiyear processing arrangement for a second 50 mb/d splitter, owned by Magellan Midstream that came online in 2017. Trafigura doesn't own equity crude production in the U.S. but operates an extensive gathering operation in the Eagle Ford and Permian Basins in Texas and New Mexico and has a 300 mb/d anchor-shipper contract on the 670 mb/d Plains All American pipeline that links Midland, Texas in the Permian and Oakville, Texas in the Eagle Ford to Corpus Christi

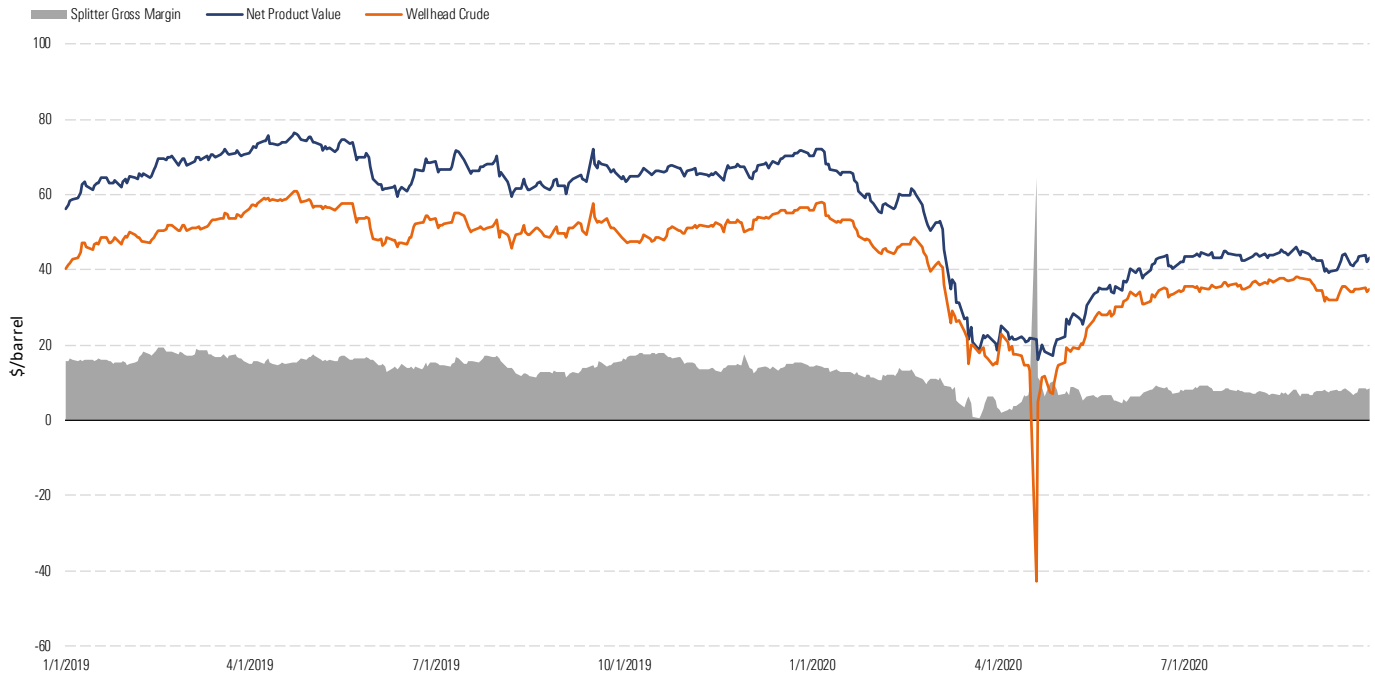
terminals. Like BP, the size of Trafigura's worldwide trading operation allows them to leverage condensate processing to sell splitter output into a wide base of local or export markets.

Margins

This note updates our previous analysis of Gulf Coast splitter operations to estimate how the Trafigura and BP plants are performing in 2020, post-coronavirus. This year U.S. refiners have run plants at reduced capacity in the face of low margins and lackluster demand for transport fuels (see for example our August note: Louisiana: Refining in a Pandemic). Earlier this month we noted how a distillate surplus weighed on refining margins (see Gulf Coast Distillate Glut Seeks Buyers). In this year's disruptive circumstances, we wondered whether running a simple condensate splitter might be more profitable than a larger refinery? Splitters tend to produce higher yields of naphtha used as a gasoline blending component and less, lower-value distillates–meaning they are better able to meet this year's market needs. Plant operating overheads for a splitter are also lower than more complex Gulf Coast refineries.

To test this hypothesis, we estimated splitter margins for 2019 and the first three quarters of 2020. We began our analysis with a splitter product yield based on output data from the Buckeye/Trafigura plant in 2019 as reported to the Texas Rail Road Commission. Average output was 2% propane, 20% kerosene, 15% distillate, 20% residual fuel and 43% naphtha. We further divided the 43% naphtha yield into two products, light (16%) and heavy (27%) naphtha. The relative proportion of light and heavy naphtha, which have different end uses and value, was derived from a 2012 S&P Global Platts analysis of Eagle Ford crude. Using this yield we estimated the gross margin using Argus Media prices for the products (Exhibit 2, blue line, left axis) and a Valero wellhead posted price for Eagle Ford condensate (Exhibit 2, orange line, left axis). The average gross margin (grey shaded area, right axis) in 2019 was $15.42/barrel, falling to $10.33/barrel in the first quarter of 2020, $7.62/barrel in the second quarter and $7.71/barrel in the third quarter.

Exhibit 2 Condensate Splitter Margins



Source: Argus Media, Morningstar.

Net Margin

Next, we subtracted fixed costs from the gross margin to get a more realistic idea of plant profitability. We used details of the Targa/Noble process agreement made public in their court hearing to estimate these costs. The Targa agreement includes a $3.413 processing fee for each barrel of condensate as well as some fuel cost assumptions that provided a rebate in 2019 and 2020 of about $0.30/barrel. In addition, our crude cost estimate for the gross margin is a wellhead posted price that doesn't include transportation to Houston or Corpus. We estimate crude transport costs at $2.50/barrel. The net result for 2019 is an estimated margin after fees and transport of $9.81/barrel. That margin shrank to $4.72/barrel in the first quarter, $2.00/barrel in the second quarter and $2.10/barrel in the third quarter.

This analysis suggests that although splitter margins were favorable in 2019–evidenced by both BP and Trafigura running their plants at full capacity last year, they were no better than other refiners in 2020. Comparison with a generic 2:1:1 crack spread reflecting a Gulf Coast refinery producing 50% gasoline and 50% distillate shows the splitter did slightly better than the crack spread in 2020 by between $0.30 and $0.50/barrel, but the comparison is uneven because the crack spread uses crude with transport costs already baked in where the gross splitter margin estimate uses a wellhead crude price.

Summing up, operating a condensate splitter during the pandemic when sophisticated refineries are struggling under high overheads and low throughput, should provide advantages, but our analysis shows it's not true in practice.

We can think of at least three reasons why that's the case. First, splitters are contracted to process a minimum volume or pay a processing fee. That means reducing throughput narrows the margin further–discouraging plant idling to stem losses. Second, the price of finished products at the Gulf Coast has been universally bad this year. Even though splitters produce more valuable gasoline components, they still produce distillate and kerosene that have been heavily discounted this year due to low demand. Third, sophisticated refineries at least have flexibility to alter their final product output based on price and demand whereas a splitter is just a primary processor that depends on crude quality for any change in output.

Simple or Complex

It's hard finding a model that works for U.S. refiners this year. Sophisticated plants are hidebound by complexity and high overheads, and simple splitters with low overheads don't fare any better. The real cure is a return to full demand both domestically and overseas that saw Gulf Coast refineries crushing international competitors as recently as 2018 (see our January 2019 note Record Runs and Strong Margins Boosted Refiners in 2018). If demand doesn't fully recover and as transport fuel use evolves, the refining industry has to expect significant rationalization in future.

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For More Information

+1 800 546-9646 North America
+44 20 3194 1455 Europe
commoditydata-sales@morningstar.com

MORNINGSTAR®

22 West Washington Street
Chicago, IL 60602 USA