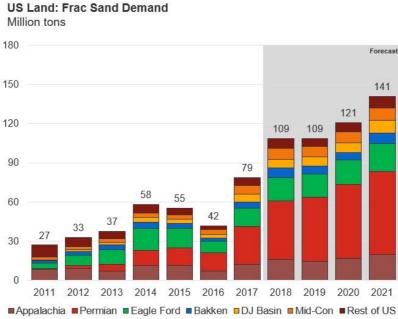
MIXED OUTLOOK FOR PROPPANT IN 2019

https://www.rystadenergy.com/newsevents/news/press-releases/proppant-outlook-2019/

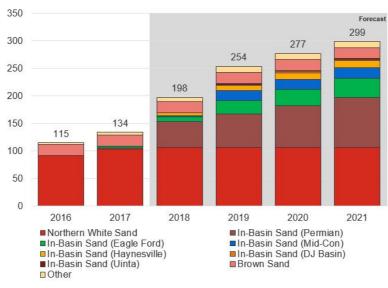
December 11, 2018

Going into 2019, the outlook for proppant – a key ingredient of fracking fluid in the shale completion market – is mixed if not outright depressed. Room for price improvements is hard to spot.

While frac sand demand is forecast to stay flat at current oil price levels, frac sand supply is forecast to increase by 28% in 2019, Rystad Energy research shows.



Source: Rystad Energy research and analysis, Rystad Energy ShaleWellCube



US Land: Frac Sand Supply Million tons

Source: Rystad Energy research and analysis

Rystad Energy has just released a new proppant market study as a part of its <u>Shale Intel</u> <u>product suite</u>. The study reveals mixed perspectives and numerous challenges which the proppant industry will have to deal with in the near future.

"The recent oil price collapse has generated a lot of uncertainty on the demand side of the equation next year. We see a range of between 109 million and 133 million tons when we vary oil price assumptions for WTI Nymex between \$50 and \$73 per barrel. This represents a very dramatic difference as the low end of this range implies virtually no demand growth in the proppant market relative to what we saw this year, at a time when a lot of new supply is set to come online. It is hard to see any room for pricing improvement in such an environment," said Ryan Carbrey, senior vice president at Rystad Energy.

The released report includes a comprehensive survey of various experts from the proppant value chain. The survey confirms mixed to depressed general sentiment currently observed in the proppant market:

- Nine out of ten respondents foresee a further increase in frac sand intensity next year, but no more than 10% relative to the level seen in 2018.
- A majority of respondents (more than 70%) are convinced that intermediate (40/70) inbasin sand grades will penetrate the Permian market to some extent.
- The oversupplied proppant market situation persists, with minegate sand prices rarely exceeding \$30 per ton for all frac sand types, including Northern White, Brown Sand from Hickory formation and in-basin sand from West Texas mines.
- Only 7% of respondents expect Northern White minegate prices to exceed \$30 per ton next year, suggesting strong consensus about the prolonged nature of existing oversupply and a continuous substitution of Northern White with in-basin sand in the demand structure.
- A shortage of drivers remains the most significant bottleneck in the last-mile trucking market, with excessive road traffic being mentioned as the second most frequent issue.

With the penetration of in-basin sand and the stabilization of proppant demand in the second half of 2018, we have already seen material downward pressure on Northern White minegate prices. In fact, the adoption of in-basin sand in the Permian has evolved at a faster rate than we initially expected.

The long list of in-basin mines in the Permian and other basins that are currently being developed but which are not yet operational could boost total US frac sand supply to 250 million tons by the end of 2019, representing a 25% increase compared to the total supply we see at year-end 2018.