



FRAC SAND

CURRENT TRENDS

- In January 2021, the U.S. government paused new drilling on federal land, which accounted for approximately 9% of all domestic oil. There is a chance for stricter regulation under the Biden administration, which could shorten mid- to long-term capacity and revenue.
- West Texas Intermediate crude pricing has stabilized since Saudi Arabia's decision to cut production, which began in February 2021 and has been extended through April.
- The appreciating U.S. dollar has negatively impacted export revenue.
- The Federal Reserve Board's Industrial Production Index has rebounded from a low of 92 in April 2020 to 105.6 in March 2021.
- Current valuations are critical in this volatile market.

PROJECTED VALUES (12-MONTH OUTLOOK)



GORDON BROTHERS BY THE NUMBERS

\$27B+

energy assets appraised & disposed

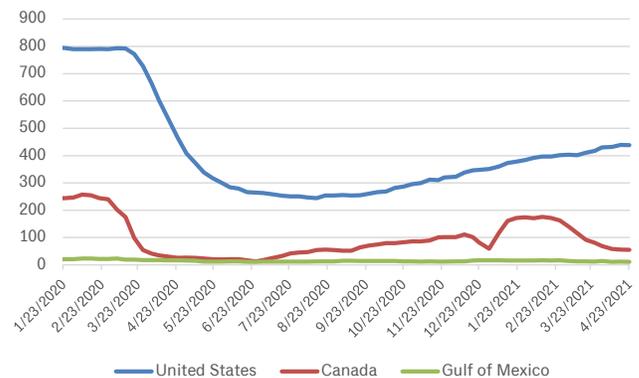
1,800+

energy engagements

2 of 5

served 2 of the 5 largest oil companies in the world

ROTARY RIG COUNT - NORTH AMERICA



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Gordon Brothers

GORDONBROTHERS.COM
+1.617.426.3233

INDUSTRY IMPROVING BUT REMAINS VOLATILE: West Texas Intermediate (WTI) oil pricing has undergone a historic decline and recovery since the beginning of 2020. Crude oil pricing at the end of March 2020 had rendered almost every oil play unprofitable in North America with the exception of a minimal number of conventional plays. WTI crude oil pricing was at \$22 to \$24 per barrel and in the single digits at \$4.18 per barrel in Alberta, Canada, as of March 30, 2020. Pricing decreased further landing at negative \$36.98 on April 20, 2020.

Since Saudi Arabia's decision to cut production beginning in February 2021 and bolstered by extensions through April 2021, oil prices have steadily increased. As of April 27, 2021, WTI Crude contracts for June were \$62.94 per barrel, which is a significant improvement from the lows of 2020. With COVID-19 vaccinations beginning to roll out in large numbers and travel restrictions beginning to lift, the demand for oil should continue to steadily increase.

In addition to the pandemic-related supply chain disruption and its impact on overall economic activity, the industry has also been impacted by the 2020 Saudi-Russia price war and the appreciation of the U.S. dollar, which negatively affected exports, along with consolidation within the industry and U.S. government restrictions on drilling activity on public lands. Some positive industry impacts include the rebound of the Industrial Production Index from a low of 92 in April 2020 to 105.6 in March 2021. Additionally, downstream construction markets are estimated to increase by 4% through 2025 per research firm IBISWorld, and WTI prices are expected to normalize.

VALUATION OUTLOOK: The valuation outlook for the frac sand industry was dim prior to the pandemic, and while expectations exist for an ongoing market for frac sand in the future, under current conditions it is expected that there will be considerable consolidation and contraction in the industry. It is important to note that only dry sand on firm orders with recently confirmed pricing and with near-term delivery would have a recovery value in a liquidation.

Equipment values will be negatively impacted by these conditions and will vary depending on the characteristics of the equipment, location and logistic-specific considerations.

TRANSPORTATION IS MOST SIGNIFICANT COST: The United States is the largest producer and consumer of frac sand in the world. A large percentage of domestic production comes from the Great Lakes region, particularly Wisconsin, Minnesota and Illinois, but most fracking takes place elsewhere in the country, thus sand must be shipped to shale basins 1,000 miles away or more. Moving sand from mines to trans-load facilities located near oil and gas plays is the most significant expense of production, accounting for upwards of 75% of the final cost for some producers or about \$50 to \$60 per ton shipped.

Further, mines that lack direct access to a railroad spur are forced to truck the sand to rail yards where it can be loaded onto railcars;

The Expert: Erick Beaudoin



Erick Beaudoin is a director in Gordon Brothers' Industrial Inventory Valuation practice. His industry specialties include building products, fabricated metal products, fabricated plastic products, automotive, paper, agricultural food products, dairy, sporting goods and fracking sand. Read his full bio [here](#).

therefore, it is advantageous for frac sand mines to have a railroad spur on-site.

WET SAND WARRANTS SPECIAL APPRAISAL CONSIDERATIONS:

To produce frac sand, raw sand is removed from the ground and then run through a wet plant that separates it into different grades (typical mesh sizes include: 20/40, 30/50, 40/70, and 100). Once sorted, the wet sand is run through a dry plant to reduce moisture prior to transport. Wet sand, therefore, is considered "in process."

Lenders considering lending against wet sand inventories should request a conversion be considered in an appraisal that would assume a portion of the wet sand would be dried so it can be sold through to customers. In the current marketplace, depending on the proximate distance to other dry plant operations, wet sand may have little to no value.

LIQUIDATION PERIOD: The liquidation period for frac sand inventories is primarily dependent on three factors: the volume customers are taking, how much wet sand is on hand, and how long it will take to convert the wet sand to dry sand.

Often, bottlenecks in the production process constrain companies' ability to convert and ship product. Because of these considerations, Gordon Brothers' appraisers typically assume a four- to six-month liquidation period for the inventory.

SEASONALITY AFFECTS INVENTORY LEVELS: In Northern White sand producing regions, such as those around the Great Lakes, long, cold winters impact frac sand mine operations. Wet sand can only be processed when the weather is warm enough, typically April through November, with the exception of companies that have moved their wet plant operations into temperature-controlled buildings and can process wet sand during the winter months. To keep dry mills running throughout the winter, processors build inventories of wet sand throughout the summer, typically peaking in November. As Texan processors encroach on market share, this will become less of an issue.

Lenders should be aware of these issues when analyzing collateral. Lenders should further note that dry sand inventory does not fluctuate in the same manner as wet sand. Most plants store dry sand in silos or covered rail cars and maintain capacity near or at the maximum for those containers.

DRILLING LEVELS AFFECT DEMAND: The demand for frac sand depends on oil drilling activity. There were positive and negative swings in rig activity throughout 2018 and 2019 saw a steady decline in rig counts over the course of the year. Early in 2020, a decline in the price of crude oil amidst the growing pandemic and a global price war caused drill counts to plummet when oil prices crashed.

Energy technology company Baker Hughes reported the North American (including rigs in the United States, Canada and the Gulf of Mexico) active rotary rig count as of April 23, 2021 was just 493. This represents only two fewer rigs than the same week in 2020; however, it also marks the week oil prices went briefly negative in the wake of the Saudi/Russia price war. Although down slightly from last year, that number represents a significant recovery from the low of 289 reached in late June of 2020 but is still a big decrease from 2019 and pre-pandemic 2020 counts.

Additionally, there is a possibility of increased restrictions/regulations on the drilling industry by the U.S. government under the Biden administration. Although there has been a history of regulation and policy risk within the industry, the current level of regulation is heavy and increasing.



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+1.617.426.3233