

June Edition: Unearthing the Fracklog

The "fracklog" has been a point of debate in recent months as analysts, executives, and pundits weigh in on its size and potential impact on the energy industry. With vast and varied opinions, decision makers can be left in the dark when it comes to discerning how the fracklog could influence their businesses. The fracklog is a newly coined term for a more familiar measure known as "drilled but uncompleted wells" or "DUCs," which simply refers to a backlog of completion work created by operators that are intentionally delaying the completion of newly drilled wells. In this month's edition, we explore both the pros and cons of the strategy from a cost/benefit standpoint, and extrapolate on the potential impacts that may be felt by certain types of oilfield service providers.

Current Fracklog Estimates by Region

Estimates of the current fracklog level vary amongst different data providers. Most of the recent estimates of the nationwide uncompleted well count fall in the range of 3,000 – 4,000 wells, but recent data from Bloomberg Intelligence indicates that the number may now be in excess of 4,700, with the Permian and Eagle Ford contributing a combined 2,790 uncompleted wells (59% of the U.S. total).



Source: Bloomberg Intelligence

Completion Delays by Operator

Select operators have given explicit guidance regarding their intent to delay completions, such as Continental Resources which stated it will defer completion on 25% of its newly drilled wells in 2015. According to energy intelligence firm Genscape, six companies have announced plans to defer completion work on a total of 845 drilled wells in 2015. EOG Resources has been frequently cited as possessing the lion's share of the backlog with 350 wells, but other notable E&Ps with significant completion backlogs include BHP Billiton, Anadarko Petroleum, and Chesapeake Energy.

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Source: Genscape analysis using Drillinginfo.com data



Incentive To Delay Completions

The purpose behind delaying completions is to benefit from a near-term rise in crude oil prices, declining completion services costs, and improving completion efficiency, while simultaneously avoiding rising storage costs and paying fees to cancel drilling rig contracts.

The crude oil market is currently in a state of contango, as depicted by the chart below, which is characterized by a futures price higher than the expected spot price. In today's environment, the expected rise in crude prices will potentially allow some operators to bolster returns on newly drilled wells by deferring completion activity, which is also becoming cheaper as E&Ps capture pricing discounts from service providers that are forced to compete on price for a drastically decreased volume of work. The chart below depicts the market's current expectations for the price of crude oil over the next twelve months:



Source: S&P Capital IQ

Recent estimates by Goldman Sachs indicate completion services now comprise approximately 60% of the total costs to drill and complete a new well, which means producers implementing this strategy need only to invest 40% of the full cost of the well up front. According to their analysis, Goldman estimates that a drilled-but-not-completed well in Q1 2015 would generate a 12% return if completion costs declined by 25% and the WTI oil price returned to \$65/bbl. However, the tradeoff is a lack of cash flows on the corresponding well despite the sunk drilling costs. This strategy of deferred completion is sensitive to the cost of funding for the producer. For poorly capitalized producers and those with a high cost of capital, the extra margin earned by deferring completion quickly disappears.

Differing Opinions

Not all energy executives are in agreement regarding the deferred completion strategy. To date, this strategy has only been announced publicly by well-capitalized producers with low funding costs, and those that have announced the strategy publicly represent a small subset of the E&P landscape. Many disagree with the strategy because of the inherent inability to anticipate near-term movements in the price of crude oil, which is subject to external forces beyond supply and demand.



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IT IS THE RIGHT BUSINESS DECISION TO DRILL THE WELLS AND DEFER COMPLETIONS INSTEAD OF BUYING OUT DRILLING CONTRACTS OR GROWING OIL IN A LOW PRICE ENVIRONMENT.

- WILLIAM R. THOMAS, CEO OF EOG RESOURCES

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THE CRUDE OIL CONTANGO MARKET IN THE U.S. HAS CREATED A MASSIVE INCENTIVE TO STORE OIL, AND WHILE TRADITIONAL STORAGE HUBS REACH RECORD HIGH LEVELS, OPERATORS LOOK TO THEIR OWN WELLS AS AN AVENUE TO STORE UNTIL COMMODITY MARKET CONDITIONS IMPROVE.

> - Randall Collum, Managing Director at Genscape

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The one thing I know in this industry is we can't even predict long-term pricing. How are we going to predict short-term pricing? While you wait to complete that well, the return is steadily declining. You're getting no revenue and you got all this sunk capital on the drilling part.

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- GREGORY HILL, COO OF HESS CORPORATION

The Not-So-Recent Growth of the Fracklog

Though the growth of the U.S. fracklog has accelerated in certain regions since the downturn in 2014, research by Bloomberg Intelligence indicates that the fracklog's growth was well underway prior to the downturn in drilling activity. The dotted yellow lines on the chart below mark the level of Bloomberg's fracklog estimates as of November 2014 when the downturn truly began to accelerate and the market began to pull back.



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NOVEMBER. THE SAME APPLIES TO 1,000 OF THE 1,540
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- RYAN CARBREY, ANALYST AT PACWEST CONSULTING

Source: Bloomberg Intelligence

According to the data from Bloomberg Intelligence, and echoed by analysts at companies including Goldman Sachs and Halliburton, most of the drilled but uncompleted wells were set up way before the oil slump began last summer, and many of those aren't likely to be brought online unless oil prices hit \$90 or \$100/bbl. Some of these wells missed targeted reservoirs or were not properly constructed and have been abandoned. Others are on the fringes of shale plays or in remote regions that are too far from pipelines to profitably transport crude.

The data indicates that the U.S. fracklog began to grow rapidly in 2013, the timing of which coincides with the widespread industry adoption of pad drilling, a technique which allows for the boring of multiple wells from a single site. According to James West, ISI Research Analyst at Evercore, "That means oil fields now typically contain uncompleted wells, and they account for about half of the current backlog...Of those, a third to half wouldn't be profitable unless oil returns to \$90 to \$100/bbl." According to Ryan Carbrey, Analyst at PacWest Consulting, "most analysis hasn't taken that into account and has overstated the backlog's potential...For instance, in the Eagle Ford Shale in South Texas, more than 700 of the current tally of 1,250 uncompleted wells were left that way before the oil slump began in earnest in November. The same applies to 1,000 of the 1,540 uncompleted wells in West Texas' Permian Basin, according to data compiled by Bloomberg."

Highgrading

"Highgrading" refers to the practice by which O&G operators selectively allocate capital to the highest returning assets in their portfolios first. This practice often increases during times of depressed commodity prices as cash flows become tight, and operators become hesitant to invest capital into marginally producing assets. Some experts are pointing to the fact that many operators are deferring the completion of their "fringe wells" and continuing the completion of only their best producing assets. The degree to which highgrading is occurring impacts expectations for deferred crude production and the breakeven price at which operators resume completion activity.



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FRACKLOGS ARE GROWING FASTER IN THE FRINGE AREAS OF PLAY RELATIVE TO THE CORES WHERE THE MOST PRODUCTIVE WELLS ARE... IN THE EAGLE FORD, FOR EXAMPLE, COUNTIES AT THE EDGE OF THE PLAY LIKE LEE AND LAVACA SAW COMPANIES GO FROM COMPLETING MORE THAN 60 PERCENT OF THEIR WELLS IN NOVEMBER TO LESS THAN 20 PERCENT IN FEBRUARY.

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- BLOOMBERG INTELLIGENCE

Negative Production Implications Mitigated by a Tight Service Market

Companies delaying the completion of wells that have been drilled are keeping an estimated 373,000 barrels a day of oil out of the market, according to energy intelligence firm Genscape, Inc. Because of this, fears do exist that the fracklog will flood the market with oil as the price of crude begins to creep back up, and the overall market recovery will regress. However, others believe that result to be unlikely due to the substantial personnel cuts that have taken place in the industry, which have made completion crews harder to come by.

According to James West, ISI Research Analyst, the personnel cuts and idled equipment in the industry will in a sense act as a governor on the industry's ability to quickly ramp up completion activity as the price of crude recovers. Thus, we are less likely to see a "flood" oil into the market and will more likely witness a gradual unwinding of the fracklog as service providers are able to scale back up. Eric Kuhle, Analyst at Wood Mackenzie, adds that "the lack of workers means it will probably take 18 months to two years for U.S. shale producers to unwind their backlog of wells. The drilled-but-uncompleted wells could pump up to 380,000 barrels a day, but spread out over that time, it would be too slow to shake up oil markets."

Opportunity for Well-Capitalized OFS Providers

Regardless of which side you take regarding the estimated size of the fracklog, the incentives to defer completions, and the impacts that the drawdown will have on the industry, it is clear that well-capitalized OFS providers, especially those with existing relationships with the fracklog's largest contributors, may be poised to outperform in a tight market during the recovery. As many of the under-capitalized OFS competitors are driven out of business or forced to drastically reduce headcount, those that are able to weather the storm will have the opportunity to increase their market share during the recovery.

In fact, a similar phenomenon of drilled-but-uncompleted wells was witnessed following the recession in 2008/2009, albeit to a lesser extent and with different drivers. Nonetheless, select OFS providers did benefit from outsized growth in the period immediately following crash. The chart below depicts the growth experienced by the well servicing market following the recession. According to analysis from Spears & Associates, the rapid return to growth in late 2010 through early 2012 was partly by the oil & gas companies trying to bring on stream all newly drilled wells, plus those wells which had been held off the market. As the current market begins to recover, we expect a similar outlook for OFS providers.



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WE DON'T SEE THIS BIG FLOOD OF INVENTORY COMING. HALF OF THE HYDRAULIC FRACTURING EQUIPMENT...IN THE U.S. HAS BEEN SET ASIDE AND DOESN'T HAVE PERSONNEL TO RUN IT AFTER THE INDUSTRY'S DEEP JOB CUTS.

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- JAMES WEST, ISI RESEARCH ANALYST

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The lack of workers means it will probably take 18 months to two years for U.S. shale producers to unwind their backlog of wells. The drilled-butuncompleted wells could pump up to 380,000 barrels a day, but spread out over that time, it would be too slow to shake up oil markets.

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- Eric Kuhle, Analyst at Wood Mackenzie

Source: Spears & Associates

M&A Activity

Announced Date	Target/Issuer	Buyers/Investors	Transaction Value (\$USDmm)
6/11/2015	CanElson Drilling Inc. (TSX: CDI)	Trinidad Drilling Ltd. (TSX: TDG)	435.75
05/22/2015	Control Zone Solutions, LLC	Cenergy International Services, LLC	-
05/18/2015	Connor Oil Tools, LLC	GEODynamics, Inc.	-
05/08/2015	Valley Wells Gathering, Treating, Compression, and Transportation Assets	Southcross Energy Partners, L.P. (NYSE:SXE)	77.64
05/06/2015	Brown Integrity LLC	Cypress Energy Partners, L.P. (NYSE: CELP)	11.20
05/06/2015	American Quantum Energy Corporation	Lang International Holdings Limited	1.24
05/04/2015	Steam Testing Solutions, LLC and AccuSteam LLC	Enerlabs Inc. (OTCPK: ENLB)	-
05/01/2015	Rhodes Manufacturing, Inc.	3 Rivers Capital, LLC	3.00
05/01/2015	Southwest Oilfield Products. Inc.	American Block, Inc.	-
04/27/2015	Lightning Industries, Inc.	MJ Bioscience Corp.	-
04/24/2015	ROC Service Company, LLC	Coral Reef Capital, LLC	-
04/20/2015	Exterran Energy Solutions, L.P., Customer Contracts Covering 217,000 Horsepower of Compressor Units	Exterran Partners, L.P. (NasdaqGS:EXLP)	102.30
04/13/2015	Bayside Petroleum Company, Inc.	iSeeAutomation, Inc.	-
04/10/2015	640energy, LLC	Intercept Energy Services Inc. (TSXV:IES)	0.26
04/09/2015	Quality Energy Solutions, LLC	Start Scientific, Inc. (OTCPK:STSC)	2.93
04/07/2015	Horizon Marine Inc.	Collection Localisation Satellites SA	-
04/07/2015	Certain Fracking Assets and Related Services	GASFRAC Energy Services, Inc. (TSX:GFS)	-
03/31/2015	Premier Utility Services, LLC	USIC Locating Services, Inc.	51.00
03/23/2015	Eagle Automation Ltd.*	Panhandle Oilfield Services, Inc.	-
03/17/2015	Pelagic Tank, LLC	Legacy Measurement Solutions, Inc.	-
03/13/2015	Inspection Oilfield Services	LB Foster Co. (NasdaqGS:FSTR)	230.00
03/12/2015	Timco Services, Inc.*	Frank's International, Inc.	95.00



*Indicates Founders Investment Banking advised on the transaction

Source: CapitalIQ



	Price per Barrel			Change	e from
	Current	Prior Month	Prior Year	Prior Month	Prior Year
Crude Oil	\$59.97	\$59.72	\$106.83	0.4%	(43.9%)





	Price per MmBtu			Change	e from	
	Current	Prior Month	Prior Year	Prior Month	Prior Year	
Natural Gas	\$2.85	\$2.92	\$4.54	(2.3%)	(37.2%)	





	Rig Count			Change from	
	Current	Prior Month	Prior Year	Prior Month	Prior Year
U.S. Onshore	830	854	1,795	(2.8%)	(53.8%)

Offshore Rig Count



	Rig Count			Change from	
	Current	Prior Month	Prior Year	Prior Month	Prior Year
U.S. Offshore	27	34	59	(20.6%)	(54.2%)



Source: Baker Hughes

Rig Counts (continued)



U.S. Rig Count by Basin

U.S. Rig Count by Basin YTD Change





Rig Counts (continued)



U.S. Oil vs. Natural Gas Rig Count

— Oil — Natural Gas

	Rig Count			Change	Change from	
	Current	Prior Month	Prior Year	Prior Month	Prior Year	
Oil	631	660	1,542	(4.4%)	(59.1%)	
Natural Gas	223	223	310	-	(28.1%)	

Gulf of Mexico Oil vs. Natural Gas Rig Count



	Rig Count			Change from		
	Current	Prior Month	Prior Year	Prior Month	Prior Year	
Oil	19	21	45	(9.5%)	(57.8%)	
Natural Gas	8	12	12	(33.3%)	(33.3%)	





Crude Oil Production







	Billion Cubic Feet per Day			Change from	
	Current	Prior Month	Prior Year	Prior Month	Prior Year
Natural Gas	74.10	74.30	69.52	(0.3%)	6.6%



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Has completed a ecapitalization by