

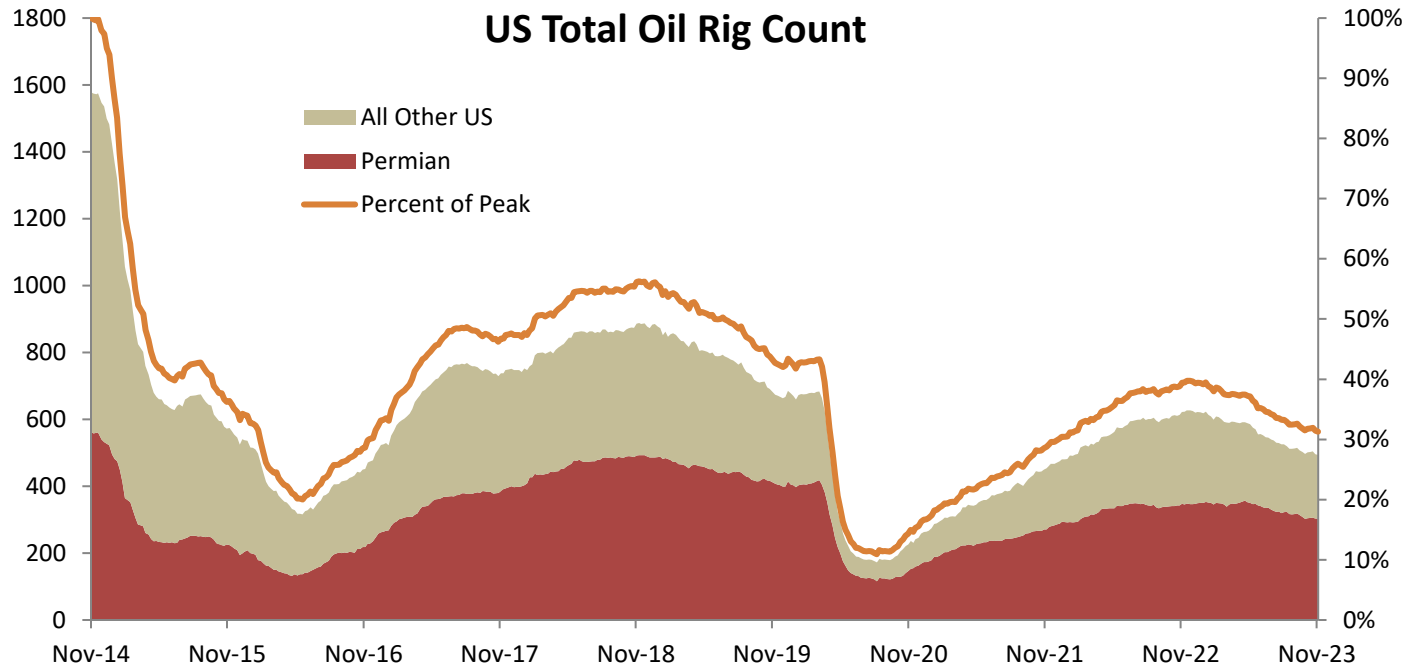
Baker Hughes Oil Rig and Primary Vision Frac Spread Counts

10 November 2023

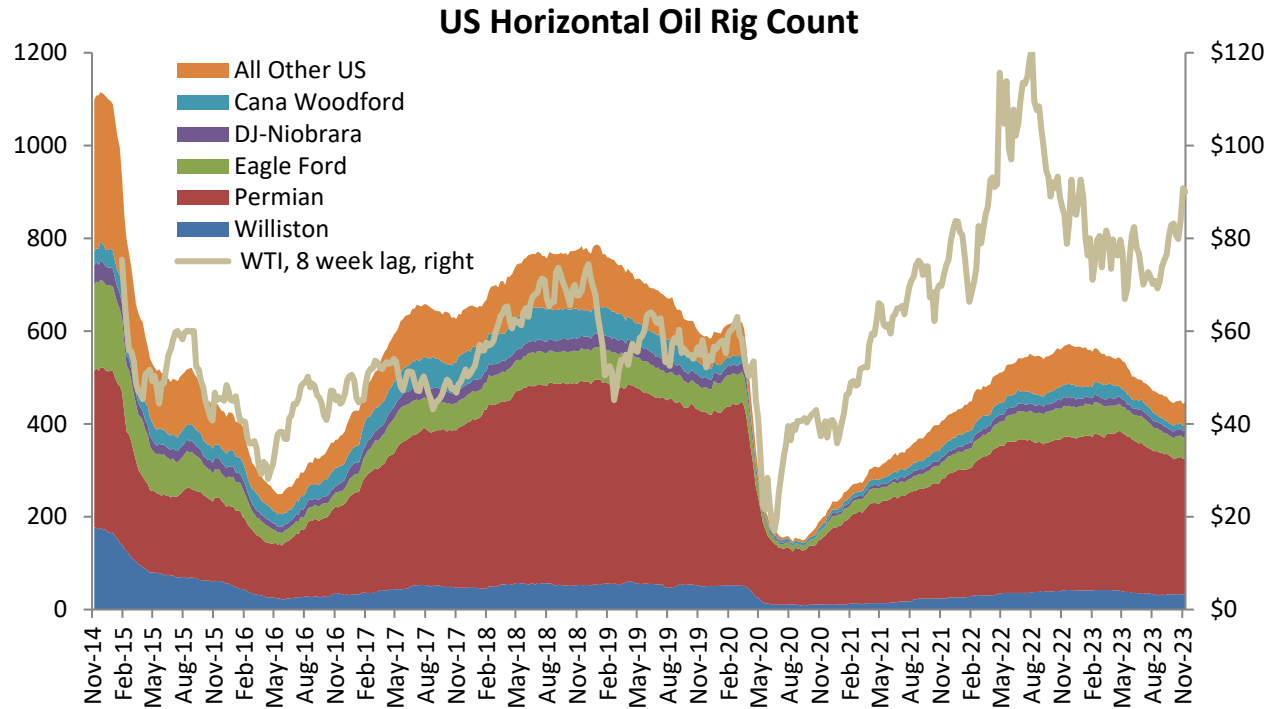
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- The breakeven to add US horizontal oil rigs now exceeds \$90 / barrel WTI. At \$90 WTI, we can expect US operators to be cutting rigs. That is incredible by the standards of the last decade. What nostalgia one can have for the go-go days of \$30 breakevens!
- Rig counts
 - Total oil rig counts: -2 to 494
 - Horizontal oil rig counts: +3 to 446
 - The Permian horizontal oil rig count: +2
 - The Canadian horizontal oil rig count saw progress this week, +3 to 123, but now 5 below this week last year
- The US horizontal oil rig count is falling at a pace of -0.75 / week on a 4 wma basis.
 - This number has been negative for 47 of the last 49 weeks
- Frac spreads fell, -2 to 268
 - DUC inventory, as measured in days of turnover, rose modestly to 13.9 weeks
- The Brent Spread (Brent – WTI) remains open, suggesting US shale oil production is exceeding expectations.

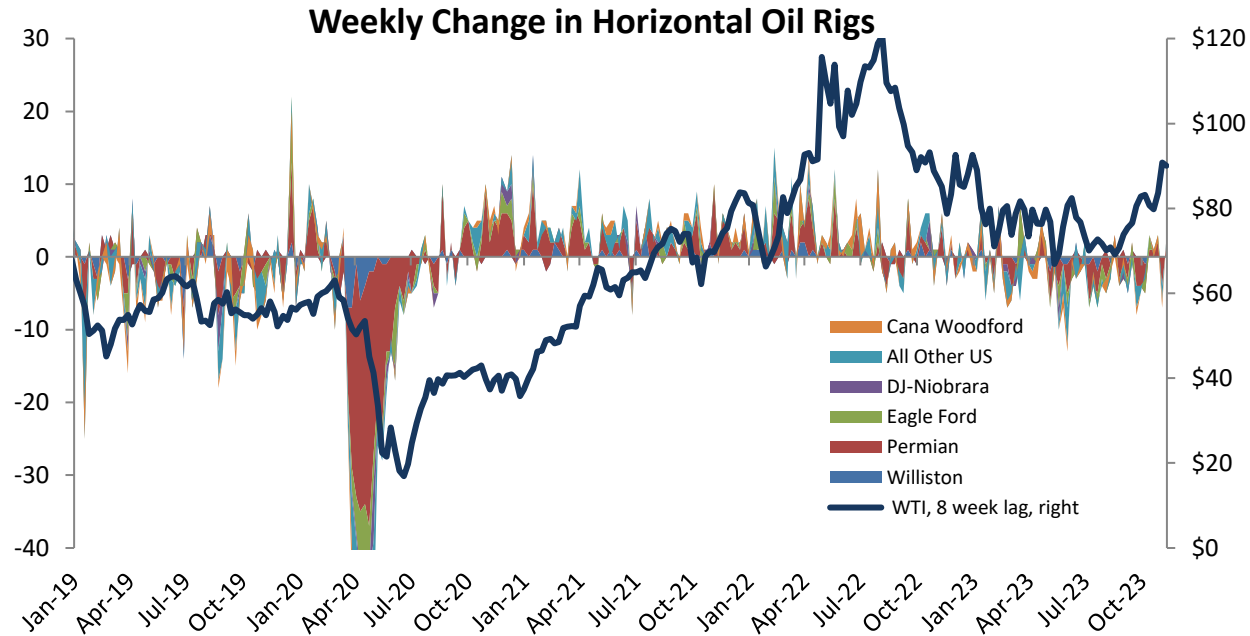


- Total oil rigs: -2 to 494
- Permian: +0
- All Other US: -2



- Horizontal oil rigs: +3 to 446
- Permian: +2
- All Other US: +1

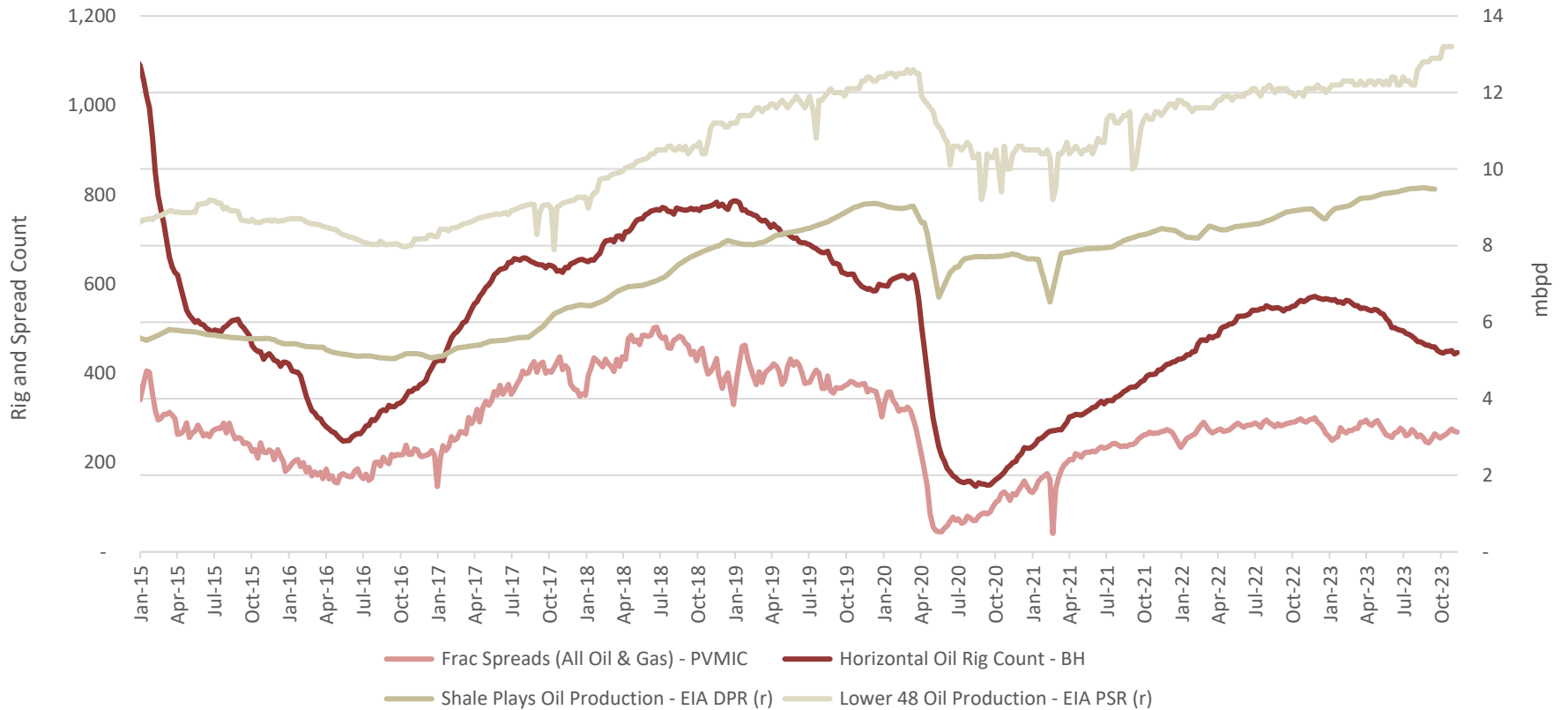
Weekly Change in Horizontal Oil Rig Count by Basin



• By Basin	Change	Count
- Williston	0	32
- Permian	+2	294
- Eagle Ford	0	47
- DJ Niobrara	0	14
- Cana Wdford	0	10
- Other US	+1	49
- Total	+3	446

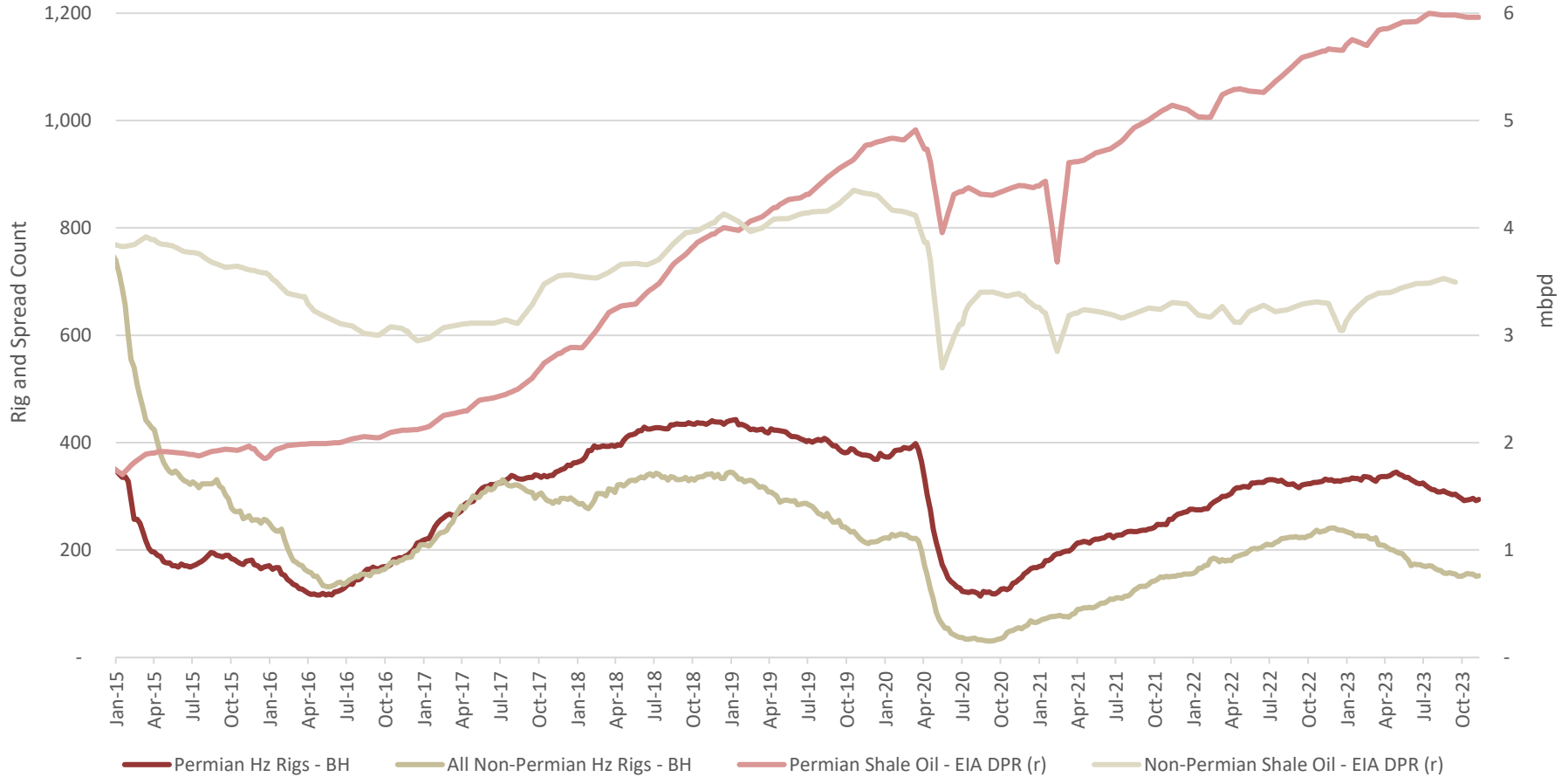
Rigs, Spreads and US Oil Production

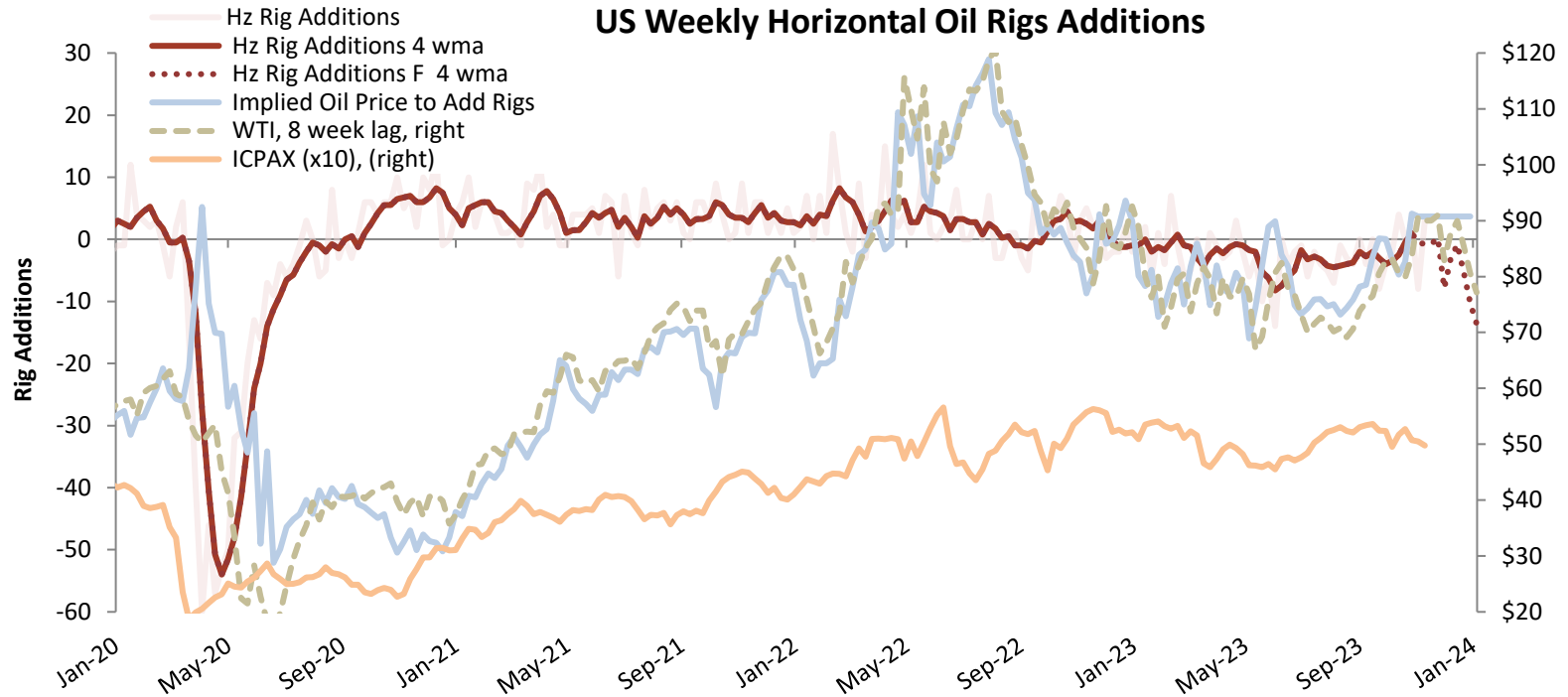
Rigs, Spreads and US Crude and Condensate Production



Permian & Non-Permian Shale Oil Production and Hz Oil Rigs

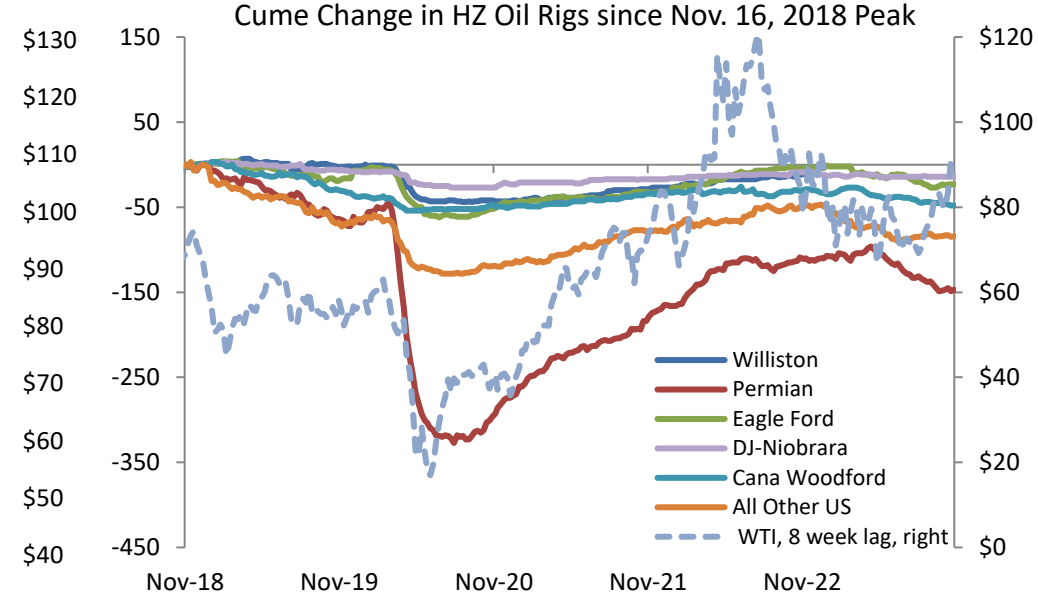
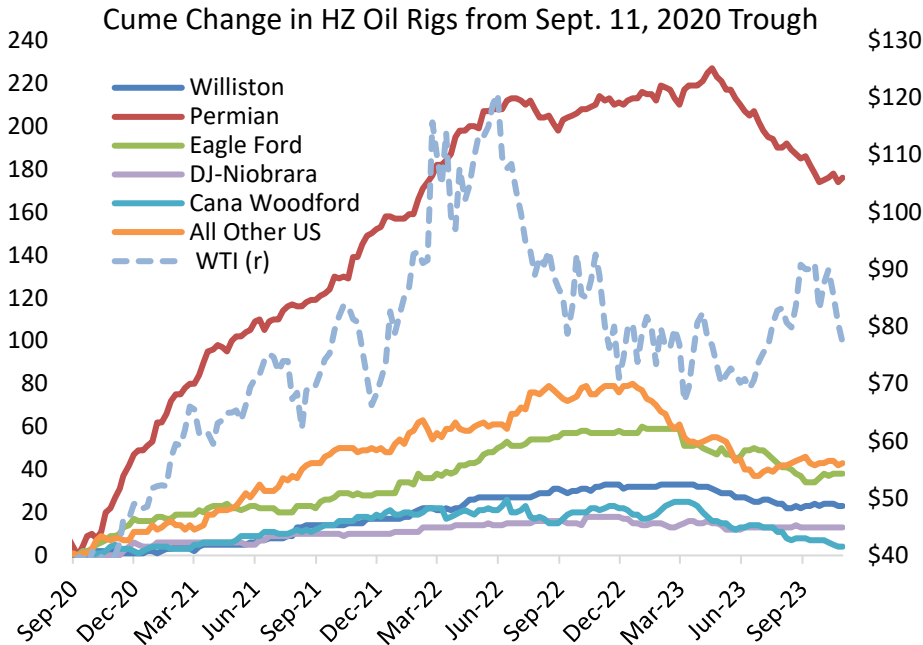
Permian and Non-Permian Shale Oil Production and Horizontal Rigs





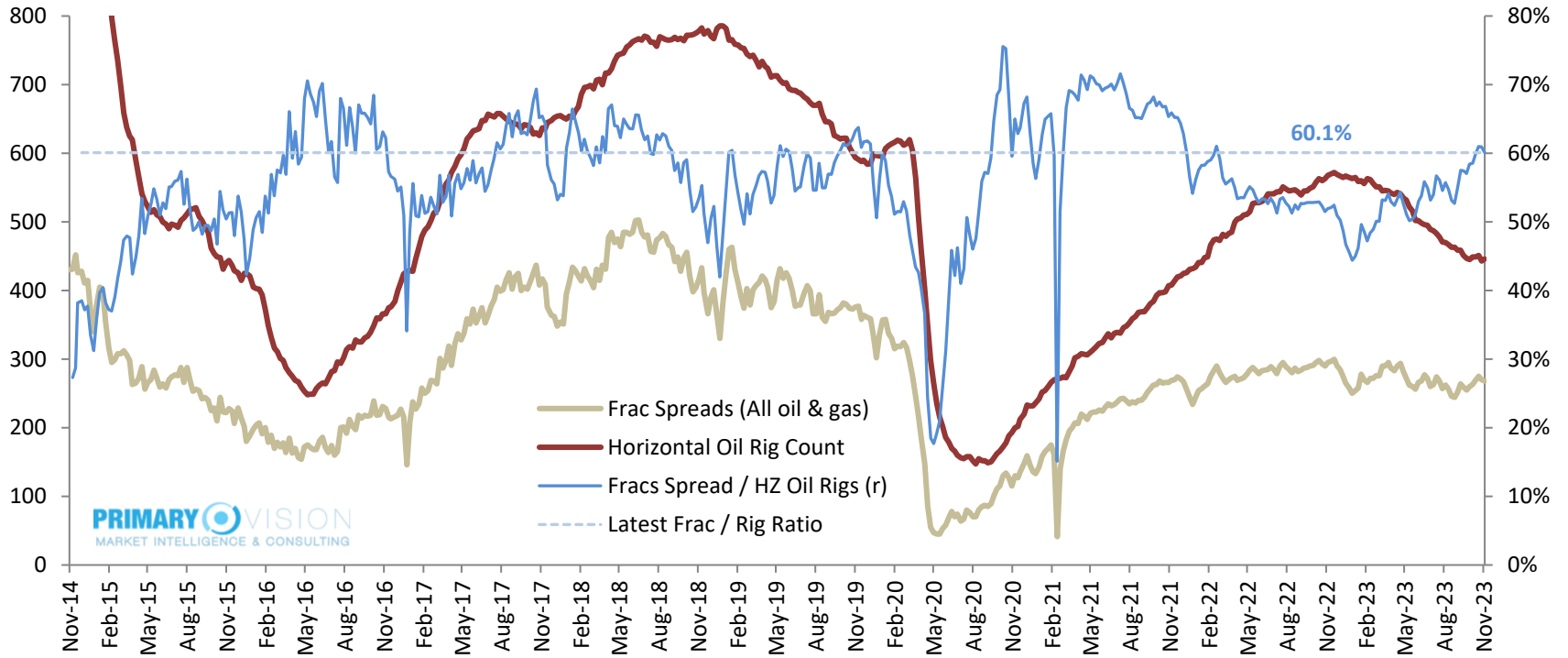
- The 4 wma pace of horizontal rig additions fell to -0.75 / week, negative for the 47th time in 40 weeks
- With an eight-week lag, the breakeven to add horizontal oil rigs stands at a horrific WTI \$91 / barrel with \$77 on the screen at writing

US Horizontal Oil Rig Change from Peak and Trough

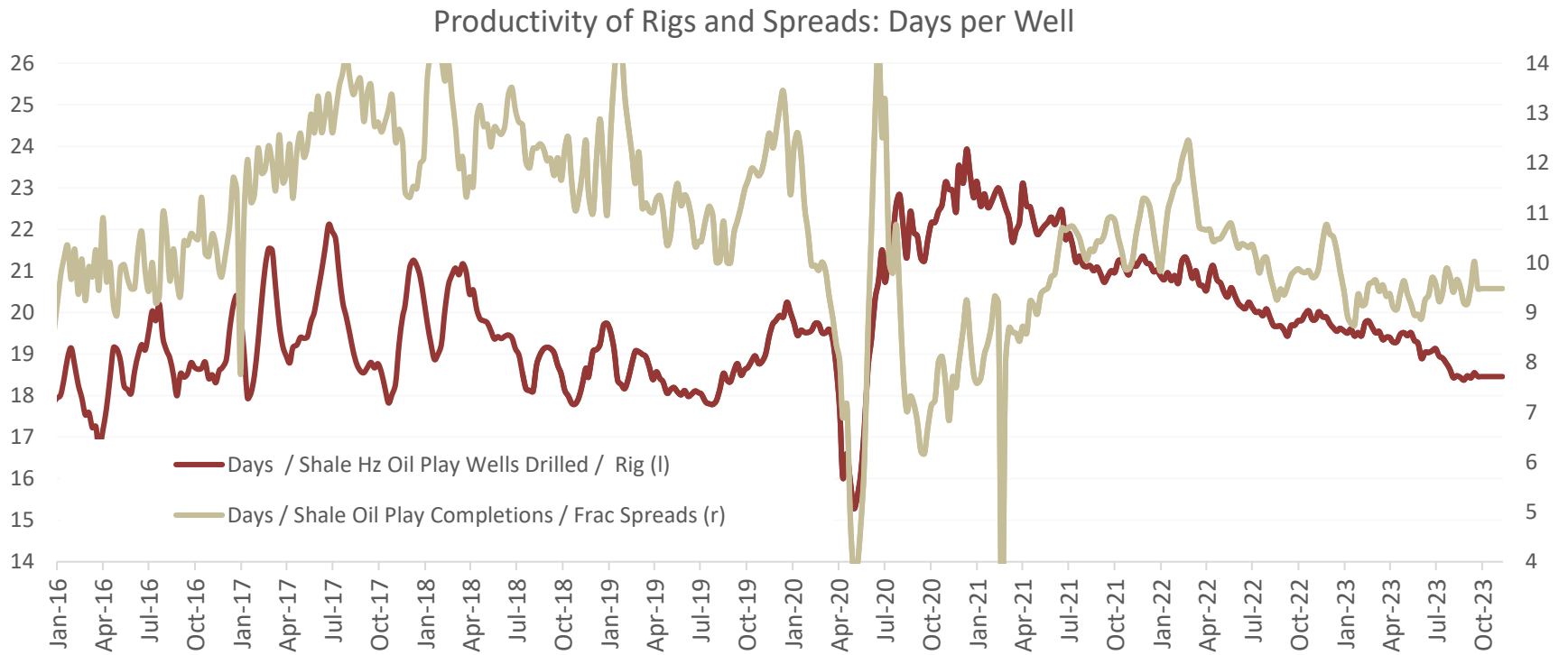


	Latest HZ Rig Count	Trough August 14, 2020				Prior Peak Nov. 16, 2018			
		Trough Count	Rig Change	Percent Change	Pct of Rig Gained	Peak Count	Rig Change	Percent Change	Pct of Rigs Lost
- Williston	32	11	21	191%	7%	53	(21)	-40%	6%
- Permian	294	114	180	158%	60%	441	(147)	-33%	44%
- Eagle Ford	47	10	37	370%	12%	70	(23)	-33%	7%
- DJ Niobrara	14	1	13	1300%	4%	28	(14)	-50%	4%
- Cana Wdford	10	6	4	67%	1%	58	(48)	-83%	14%
- Other US	49	5	44	880%	15%	133	(84)	-63%	25%
- Total	446	147	299	203%	100%	783	(337)	-43%	100%
		<i>05/22/20</i>							
- Frac Spreads	268	45	223	496%		433	(165)	-38%	
<i>Spread Ratio</i>	<i>60.1%</i>	<i>30.6%</i>				<i>55.3%</i>			

Frac Spreads and Horizontal Oil Rigs



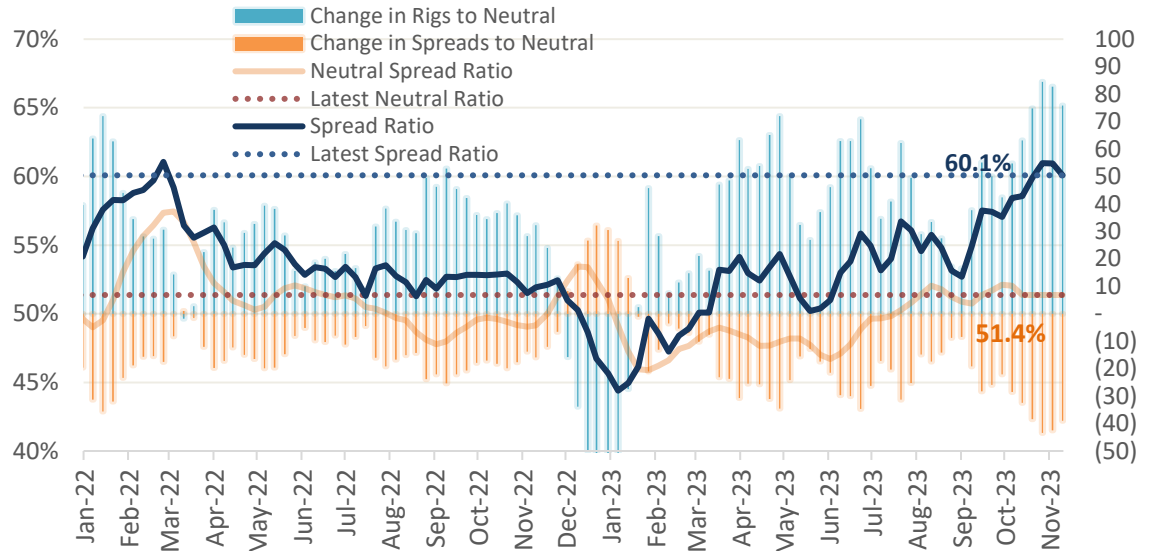
- Frac spreads were -2 to 268



Rig and Spread Productivity

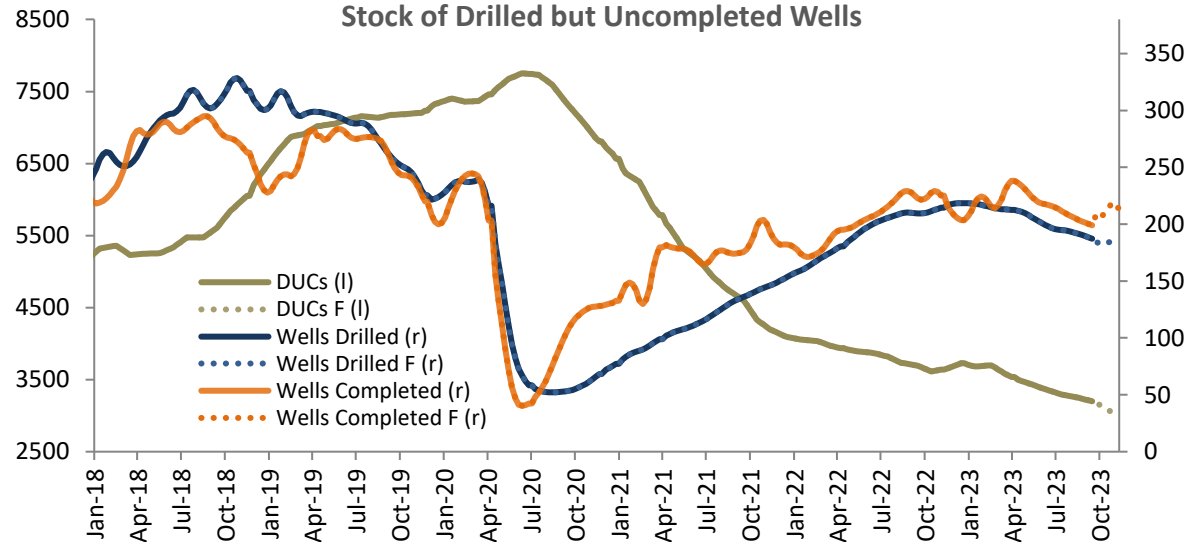
- At estimated productivity levels and current rig and spread counts, the DUC inventory is declining
- To hold DUCs constant, rigs would have to fall by 83 or spreads would have to rise by 42

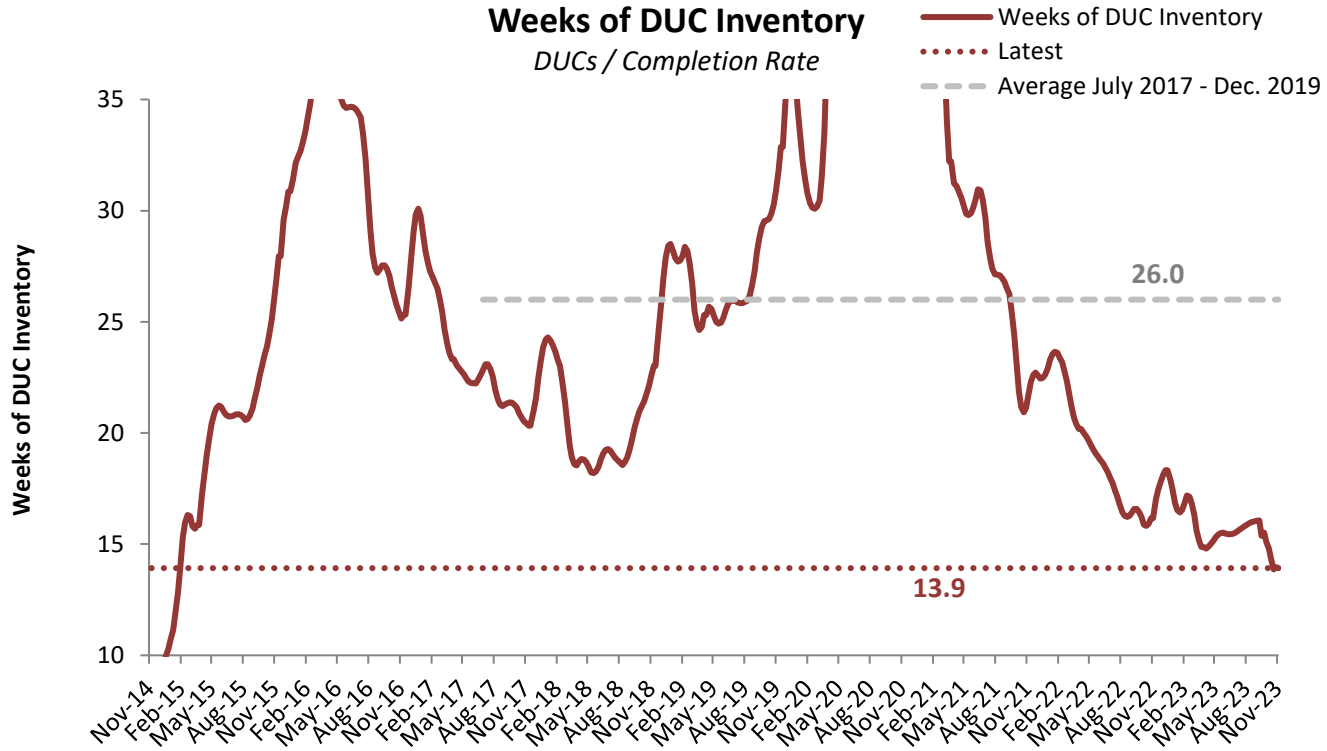
The Spread Ratio and Rigs and Spreads for DUC Neutrality



Horizontal Oil Wells Drilled and Completed per Week

Stock of Drilled but Uncompleted Wells

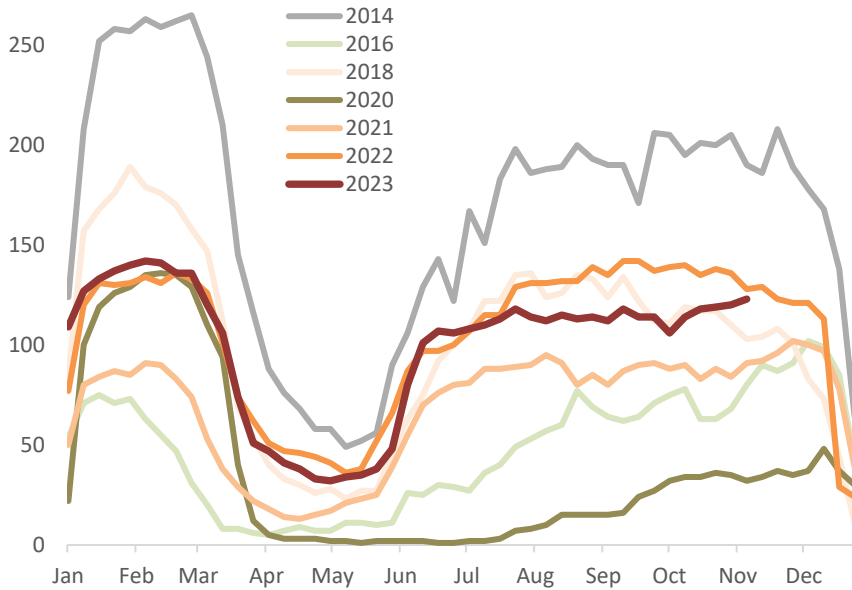




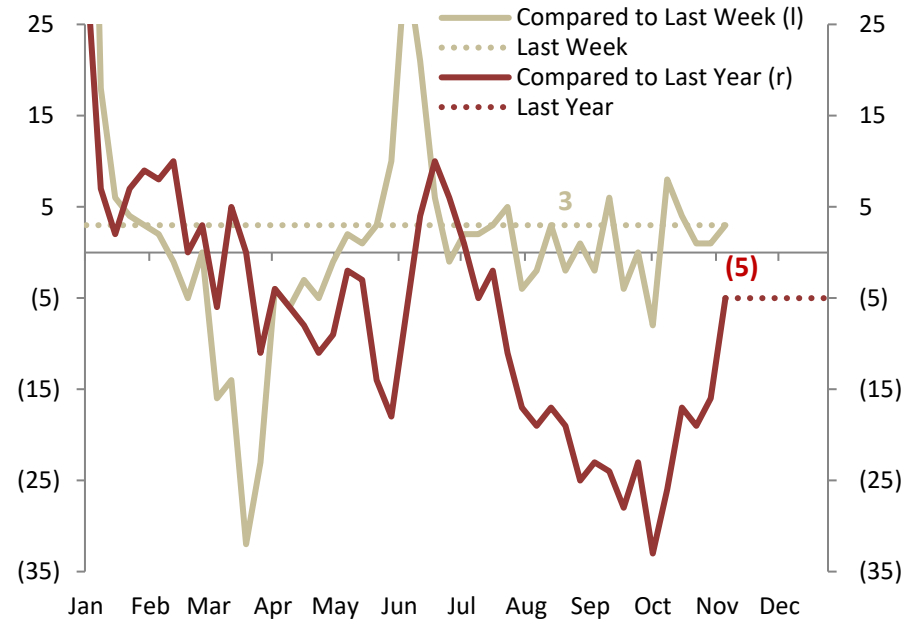
- DUC inventories are at 13.9 weeks

Canada Horizontal Oil Rig Count

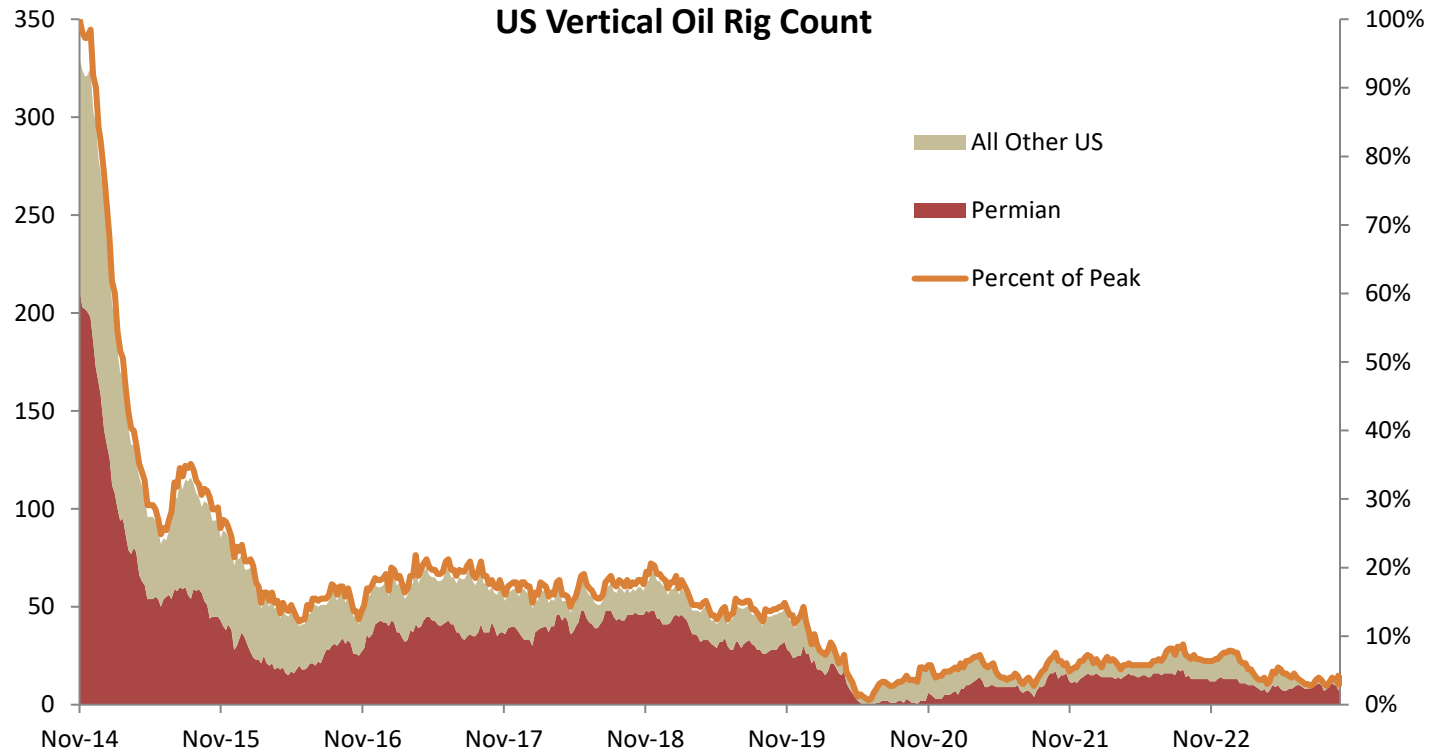
Canada Horizontal Oil Rigs



Compared to Previous Week, Previous Year

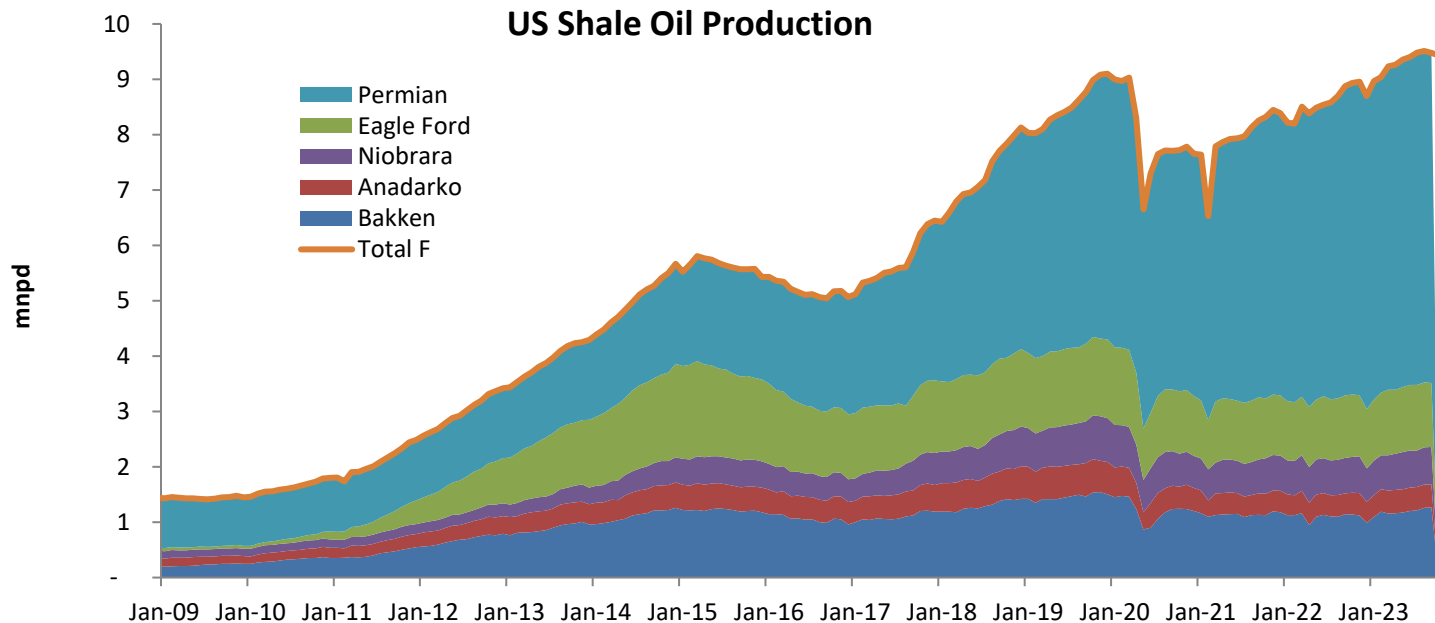


- Canada horizontal oil rigs were +3 to 123 last week
- Rigs counts were -5 compared to the same week last year



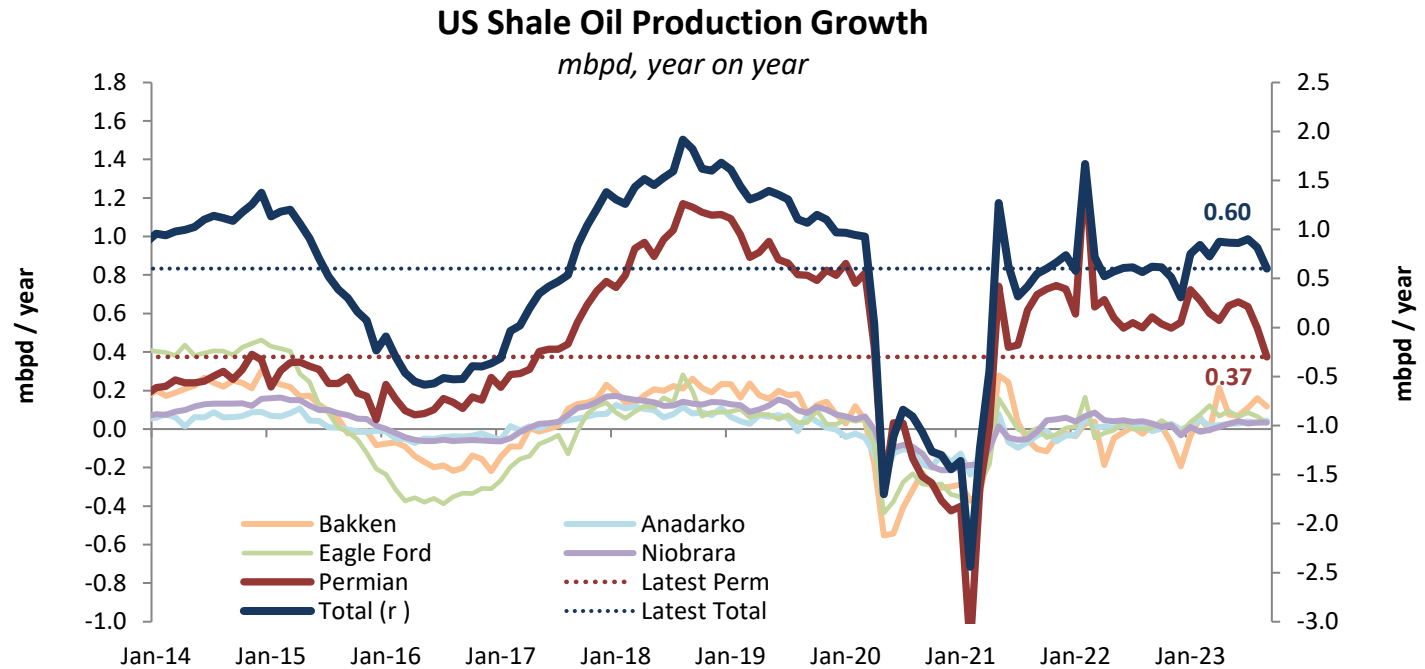
- Vertical oil rigs: -3 to 10
- Permian: -2
- All Other US: -1

US Shale Production Growth (Oct. DPR)



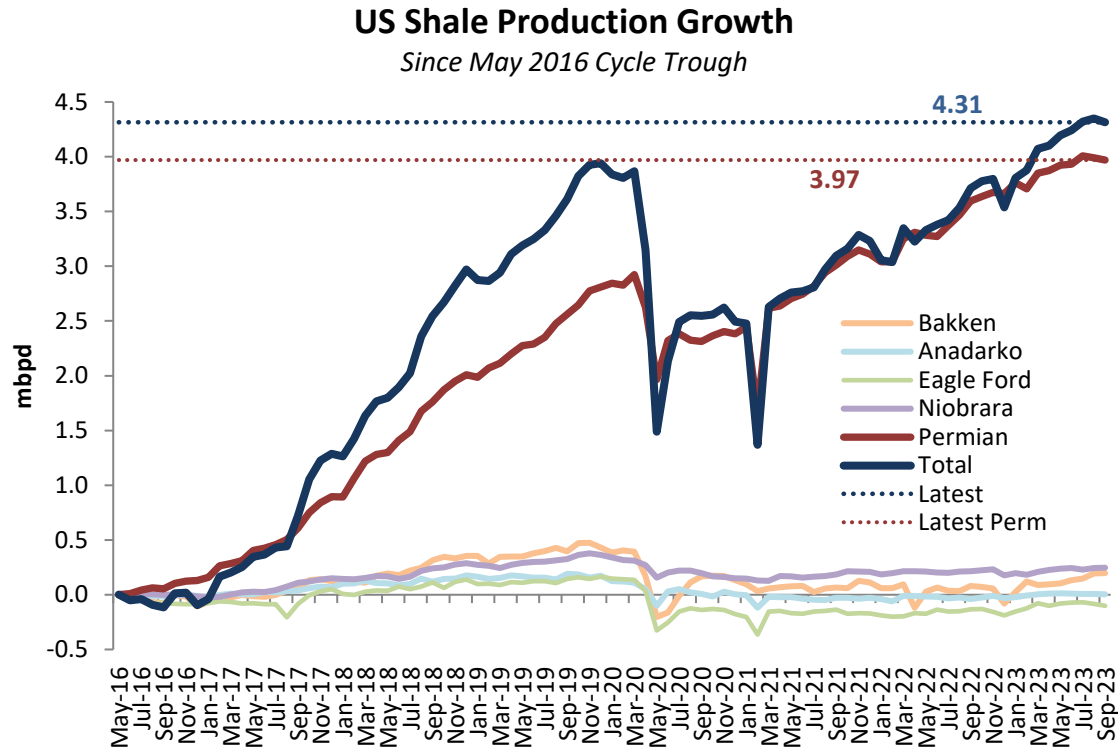
- In the October DPR report, September crude and condensate production from key shale plays fell to 9.47 mbpd, down 34 kbpd from August.
- However, total August C+C production was revised up a whopping 237 kbpd, and the May-August period was revised up by an eye-popping 182 kbpd on average
- The EIA continues to see peak shale oil output for July 2023. Having said that, revisions have been so large lately that my confidence in reported numbers is at a low at present. The EIA has been in a revision spree lately – which happens sometimes – but it does make the data hard to interpret, and reliable month-to-month comparability may not be restored until early next year.

US Shale Production Growth (Oct. DPR)



- Compared to last year, total shale oil production is up 0.6 mbpd
- The Permian is up 0.4 mbpd
- As before, annual Permian growth is rapidly decelerating

US Shale Production Growth from May '16 (Oct. DPR)



- Since the prior cyclical trough in May 2016, total shale oil production from the key plays is up 4.3 mbpd
- All but 340,000 bpd of this growth comes from the Permian basin

