Questions for the US Oil and Gas Industry

USAEE, Houston TX, March 2020

Spears and Associates, Tulsa, OK

First, a thought experiment: How many Covid-19 cases must be prevented to justify slowing the US economy?

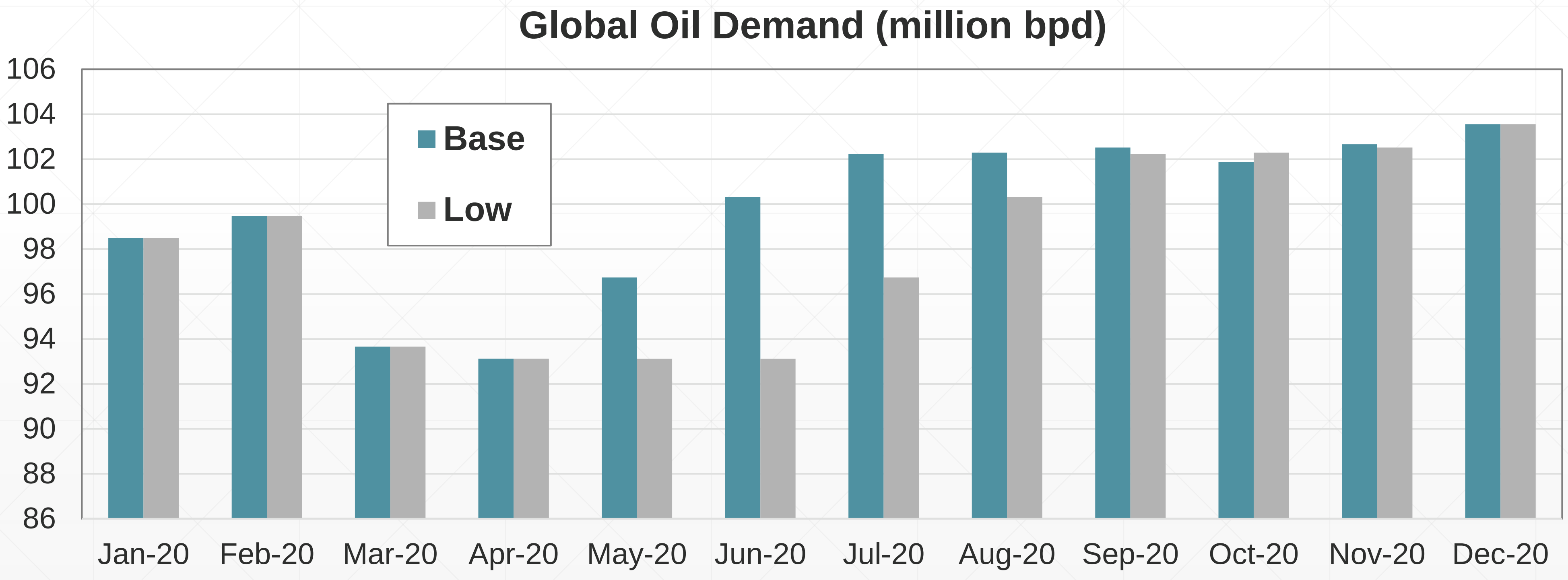
Four systems defining the current crisis:

- Medical
- Economic
- Social
- Political

Monthly US Economy	$2,000,000,000,000
% impacted by shutdown	0.1
# months	2
$ Impact of shutdown	$400,000,000,000
Value per year of life	$125,000
Years saved/person	10
Value of life saved	$1,250,000
# lives saved	320,000
Fatality Rate	0.0125
# infections prevented	25,600,000

How fast and how far will global oil demand fall?

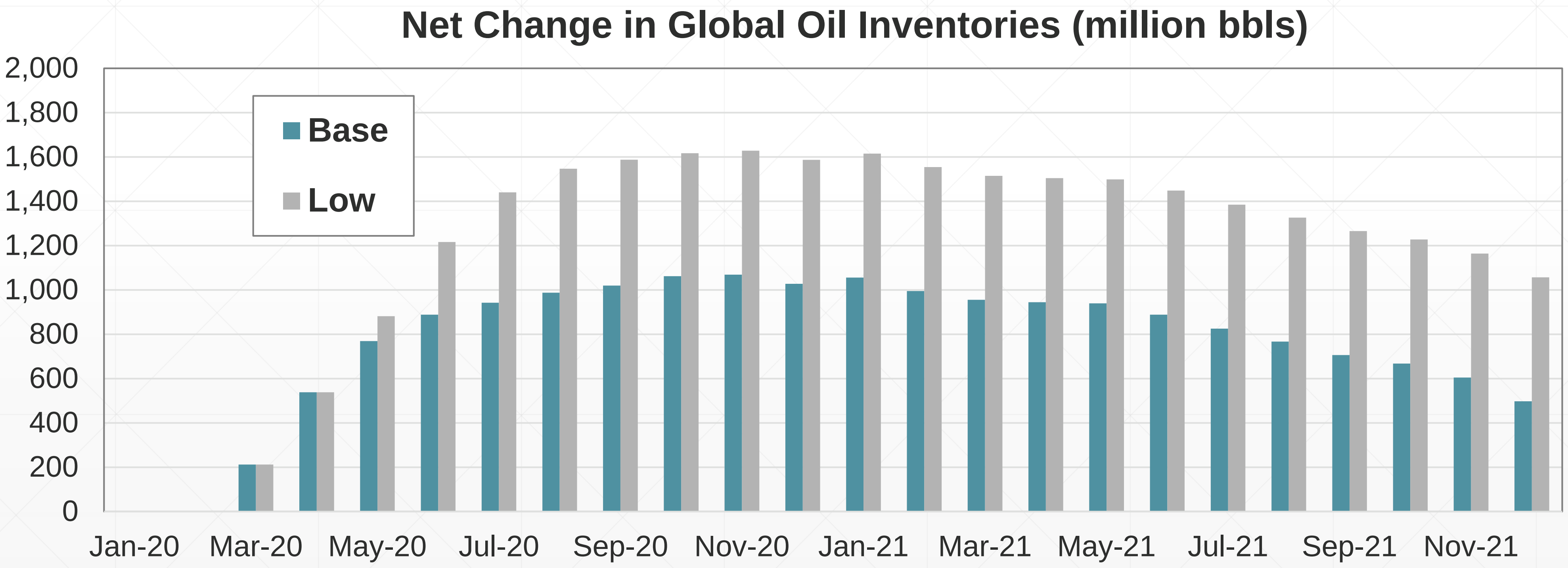
Base case – March/April “hard” shutdown, then recovery; 99.7 million bpd in 2020, down 1.0 million bpd. Low case – (March/June) “hard” shutdown, then recovery. Down 3.5 million bpd.



102.9 million bpd demand in 2021. Will monetary/fiscal stimulus and low oil prices spur greater demand growth in 2021?

How fast and how high will inventories rise?

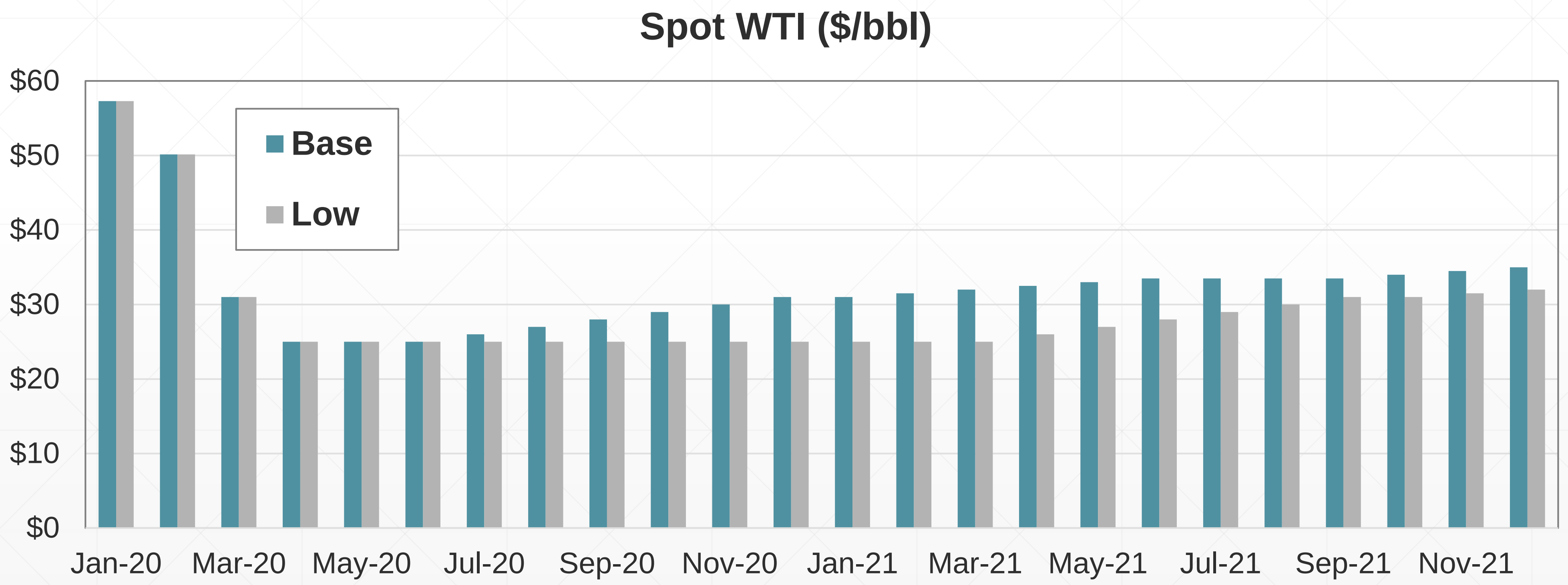
Base case – global oil stocks up 1,050 million bbls by November 2020, then falling. Eliminated by mid-2022.



Low case – inventories up 1,600 million bbls by November 2020. Not eliminated until Q1 2023.

Where are oil prices headed?

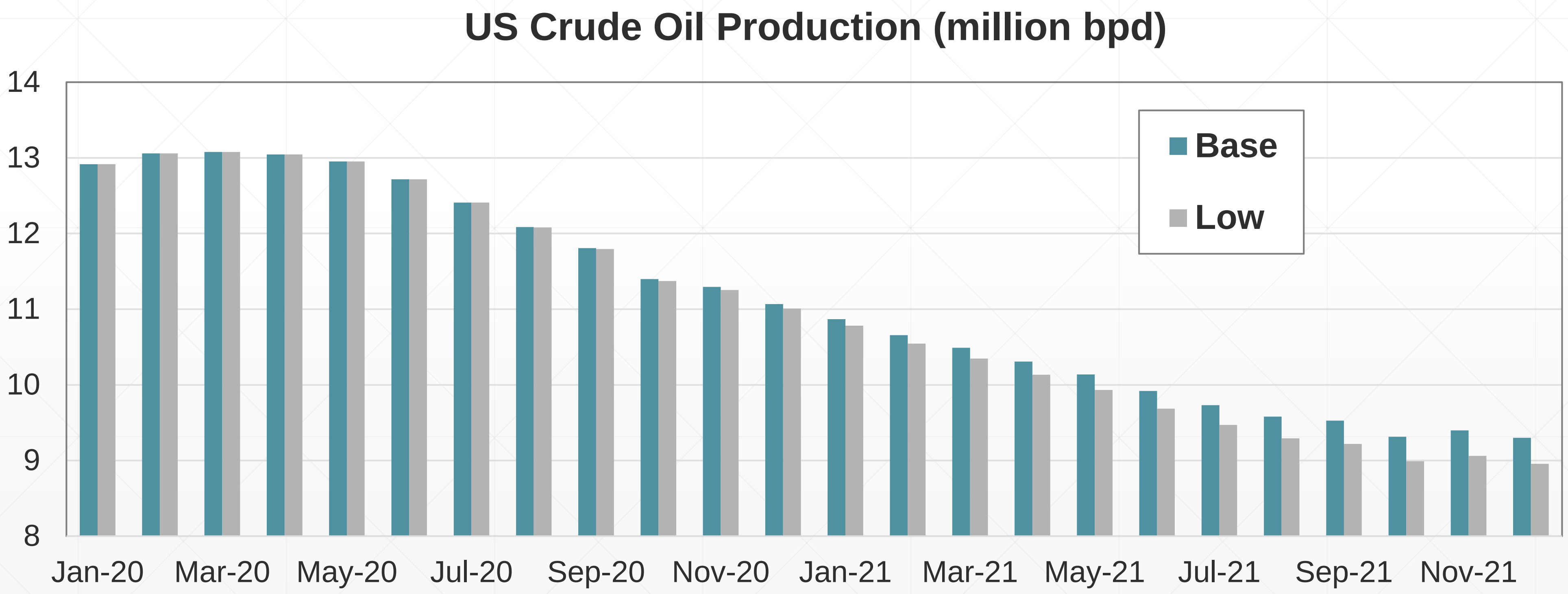
Low for 2-3 years. Return to $55 at “normal” inventory levels (mid-2022 in Base Case; Q1 2023 in Low Case).



Post-2022 global oil market – prices must regulate demand growth due to absence of spare production capacity (does price inelasticity mean a 3X-4X increase in oil prices?)

How fast and how far will US oil production drop?

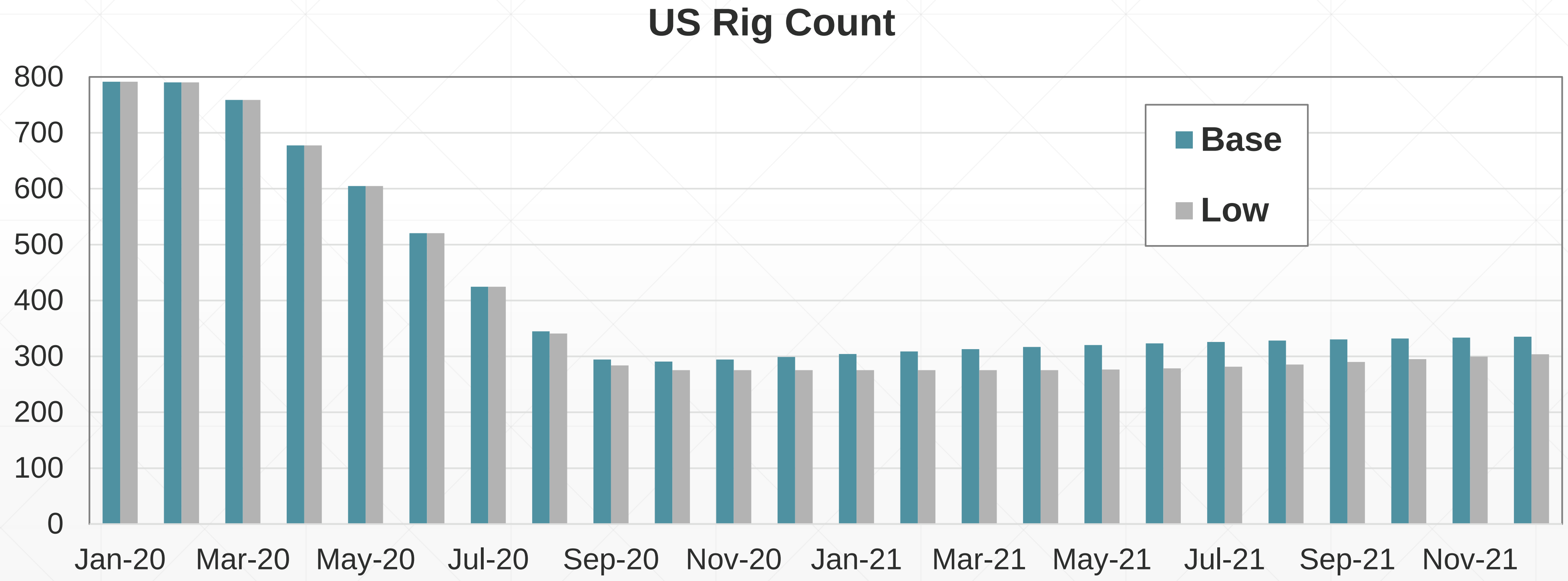
Down 2.0 million bpd by Dec-20 in Base Case; down another 1.7 million bpd (Base Case) to 2.0 million bpd (Low Case) by Dec-21.



Well maintenance already at a standstill.

What are the implications for the oil service sector?

Down 46% in 2020 to 500 average rigs in Base Case; down another 35% (Base Case) to 45% (Low Case) in 2021. Fractivity expected to fall faster over near term.



Well costs down ~20% this year?

Errata

Pre-oil price collapse - limited interest by investors

- **A call from Norway:** “We’ve raised $2 billion in our five funds, but we might not be able to raise any more because no one wants to invest in fossil fuels.”
- **A call from Sweden:** “Our investors don’t want to be seen owning anything that looks like fossil fuels.”

But... “distressed-asset” funds now circling the oilpatch

Cash management is key. Next round of bank redeterminations to hit small, private independents.

Limited interest/ability in addressing technical challenges when in “survivability” mode

Operators’ need to improve profitability in order to attract investors will limit how fast capex/rig count chases higher oil prices.