

2020-21 Western Canada Activity Review: The Patch in the Time of COVID

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Summary

Despite a strong start for the first two months of 2020, new oil and gas well drilling in the WCSB fell to historic lows in the face of a Russia-Saudi Arabia price war immediately followed by demand destruction brought on by the COVID-19 pandemic. Eighteen months later the industry, along with the rest of society, continues to recover from the effects of the virus. Corporate mergers and layoffs, “normal” price volatility and ongoing egress issues are also tied into low activity levels of late. In the face of these headwinds, the Canadian petroleum industry carries on, adapting through the development of new ideas and technical innovations in established plays and clean technology opportunities.

Theory / Method / Workflow

The authors are part of a team that continuously evaluates and maps publicly available drilling, land sale and completions data, as well as production results throughout Western Canada. This analysis highlights the trends and geological zones that industry pursued from January 2020 to June 2021.

Results, Observations, Conclusions

Almost all geological zones saw a drop in drilling during the review period compared to 2019 (figure 1), with a few notable exceptions. The Colony to Lloydminster heavy oil interval remained the most popular target, despite a 35% decrease in activity from 2019 to 2020. The Clearwater in particular benefited from the ability to produce without costly completions, although operators have started waterflooding to improve recovery in some areas (Wells, 2021). Montney activity held relatively steady, down by only 14%, with NE BC drilling actually up from previous years. Montney completions continued to evolve, accounting for over 60% of all proppant used in Western Canada in 2020 (Horton, 2021). Viking, Duvernay, and Cardium drilling were all down by varying degrees, but important developments include the north and eastward expansion of the Duvernay at Kaybob, and high Cardium production rates from new areas south and west of the Pembina “heartland”.

The gas-rich Spirit River of the Deep Basin was the only major zone that saw an increase in activity after the COVID-induced oil price plunge, owing to relatively high and stable NG prices. Although it comprises a small portion of the total Western Canada spud count, helium drilling into multiple Paleozoic targets is also on the upswing in southwestern Saskatchewan. Several clean technology initiatives came to the forefront in 2020/21, including ongoing geothermal development by Deep Earth Energy at Tableland, SK and Eavor at Rocky Mountain House, AB; a combined carbon storage and enhanced oil-recovery program in the Leduc by Enhance Energy at Clive; Proton Technologies testing the collection of hydrogen gas from a Waseca

heavy oil reservoir at Kerrobert; and multiple efforts to reduce emissions and energy use in the oil sands for both in situ and mining development.

Novel/Additive Information

The presentation will provide a synthesis and review of large-scale exploration and development trends across the WCSB from January 2020 to June 2021, along with a summary of less-heralded targets and various developments in clean technology throughout the basin over the same time period.

References

Horton, J. 2021. 2020 Western Canada Year in Review: Completions. Accessed March 2021. <https://digest.canadiandiscovery.com/article/8395>

Wells, P. 2021. Clearwater Play Keeps Advancing. Accessed March 2021. <https://www.dailyoilbulletin.com/article/2021/3/23/clearwater-play-keeps-advancing/>

Figure 1: Western Canada Drilling, 2017-2021

