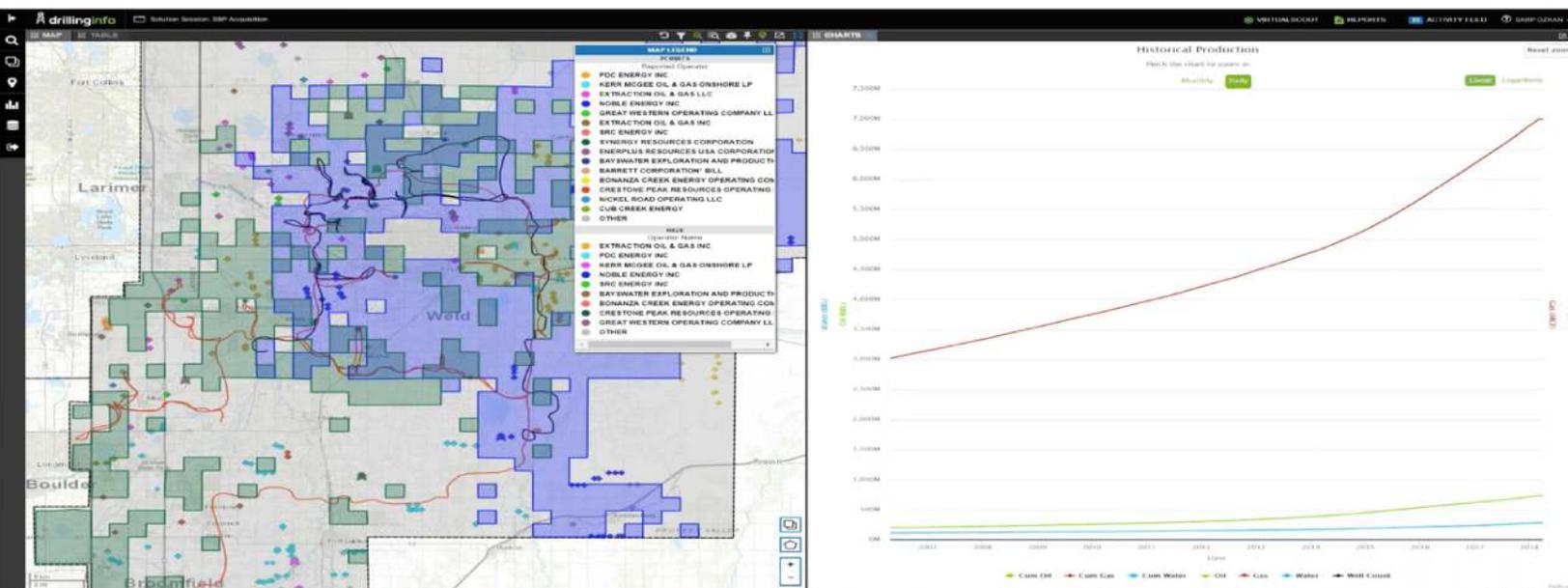


ANALYZING THE SADDLE BUTTE ACQUISITION WITH DRILLINGINFO'S MIDSTREAM SOLUTION



Drillinginfo's solution – Midstream Premier – enables midstream companies to evaluate investment opportunities and analyze areas of interest in considerable detail – from building representative type curves and pairing with drilling schedules to understanding production volumes and breakeven economics. In this case study, Drillinginfo assesses the economics behind the January 2018 Saddle Butte acquisition by Noble Midstream and Greenfield Midstream.

Background on the **Acquisition:**

On January 31st, 2018, Noble Midstream Partners LP and Greenfield Midstream LLC announced the completion of the acquisition of Saddle Butte Rockies Midstream for \$638.5 million through a newly formed venture – Black Diamond Gathering LLC. Noble will operate and control the asset. Assets include a large-scale crude oil gathering system consisting of 160 miles of pipeline currently in operation; 300,000 barrels per day of delivery capacity; and approximately 210,000 barrels of crude oil storage capacity. Saddle Butte has approximately 141,000 dedicated acres from six customers under fixed-fee arrangements with PDC Energy, the premier operator in the region having expanded its dedicated acreage from approximately 72,000 to 96,000 net acres. How attractive a gathering asset is Saddle Butte and what are the opportunities for further production dedications?

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Production Forecasting for the Denver-Julesburg Basin (DJ Basin)

Using DI Prodcast, we analyze the DJ Basin - taking wells that operators plan to drill and combining these with type curves to come up with accurate production forecasts. Figure 1 shows production changes by field in the DJ Basin with the bottom-left graph showing that the DJ Wattenberg field provides the bulk of production. Breakevens were also calculated with DJ Wattenberg field coming out at \$35. The DJ Basin was also broken down by crude oil quality with much of the crude a lighter 42-50 API variety - a good fit for less complex refining infrastructure and in meeting the International Maritime Organization's (IMO) sulfur regulations to be enacted in 2020.

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Creating an Area of Interest (AOI)

We now create an AOI and track activity within DI's flagship web application. In figure 2, we not only upload and overlay the Noble and Saddle Butte dedicated acreage positions, but also show production charts and cumulative production over time in the catchment area. On the left-hand side, we can see that there is a lot of running room left, particularly in the top-right and in the middle of the AOI.

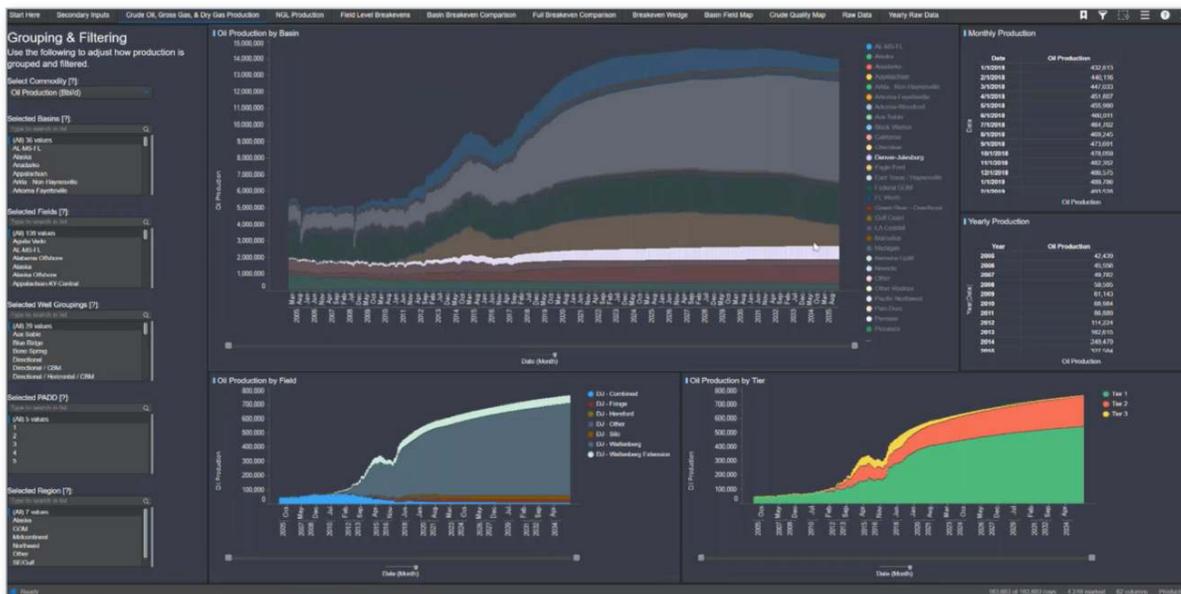
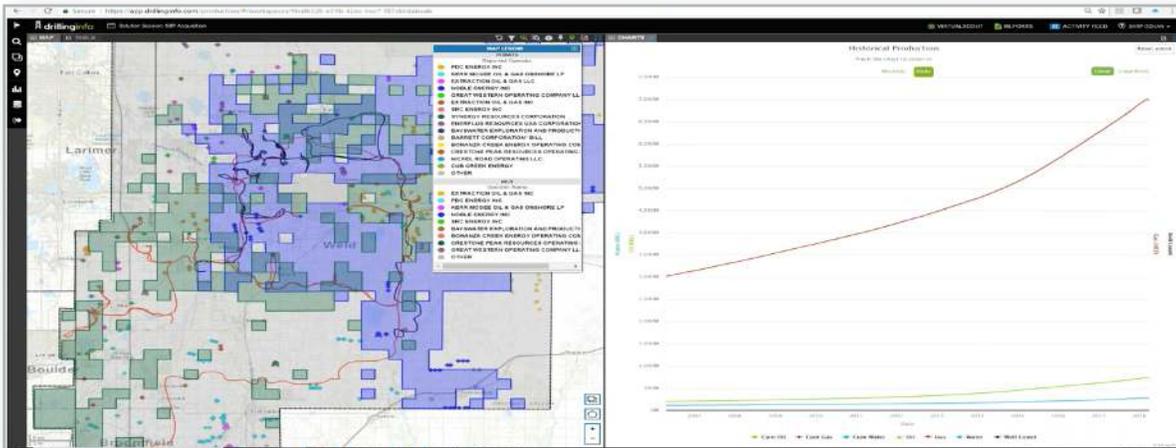


Figure 1

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Figure 2



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Tracking Rig Activity and Uncompleted Wells

We now move to DI's rig analytics system to look at rig activity in Weld County where the asset is based. Here, one can look at well starts and spuds through time given the number of rigs in the area – crucial information for determining drill time, the number of wells that can be drilled, and how many wells can be associated with each rig. Figure 3 highlights the number of rigs in Weld County in green along with the number of spuds that have trended and the rig count. More than three wells are being drilled per month per rig making it one of the fastest growing areas in the country and with significant implications for the profitability of Noble's midstream infrastructure. The number of drilled uncompleted wells are also analyzed, highlighting where future opportunities may lie.

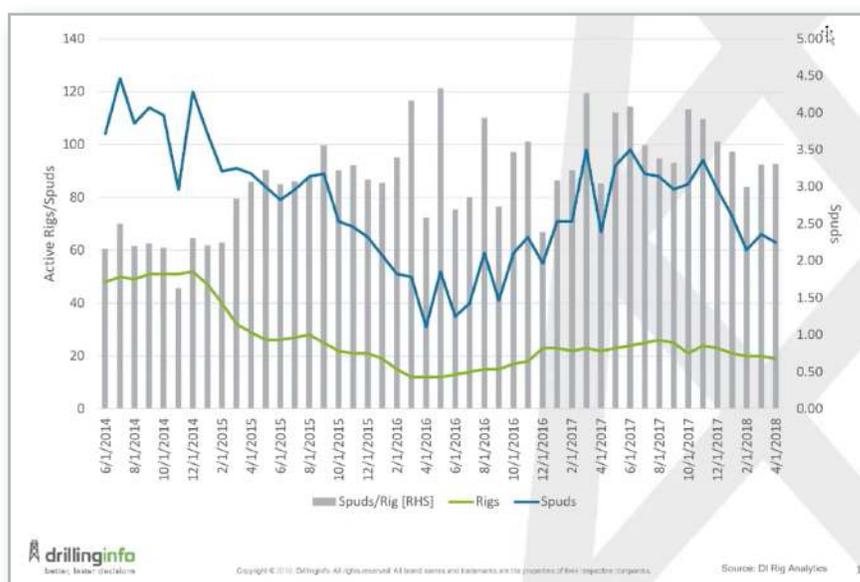


Figure 3

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Calculating the Well Economics

It is now possible to predict well-level production and economics around the Saddle Butte acquisition through the DI Wellcast tool. Figure 4 provides the key PDP volumes for the target area. On the right there are PDP metrics, such as number of wells, operators, first production dates, fully calculated EURS, and remaining recoverables.

In addition, one can then insert drilling schedules and calculate completion schedules, parameters, and oil & gas production forecasts moving forward. We can generate plots to show PDP volumes and incremental production - calculating 550,000 barrels by mid-2025. This shows that the target area will be responsible for the bulk of the volumes coming out of the basin and that Saddle Butte has the potential to be a highly profitable acquisition.

Finally, we calculate the well level economics for the type curve that has just been built in figure 5. With the economics for the well at a \$60 a barrel oil price, a \$2.75 gas price, and fixed and variable operating costs, we calculate a breakeven figure of \$28 WTI, illustrating the outstanding economics of the area – undoubtedly the core of the DJ Basin. This also compares to the \$35 breakeven figure for DJ Wattenberg earlier in this case study.

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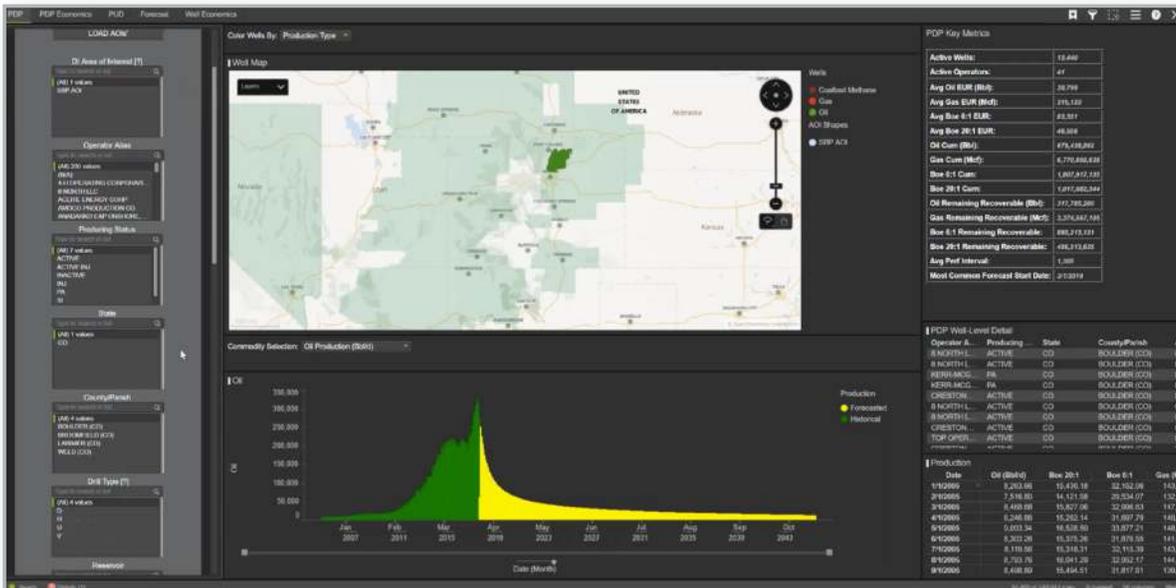


Figure 4

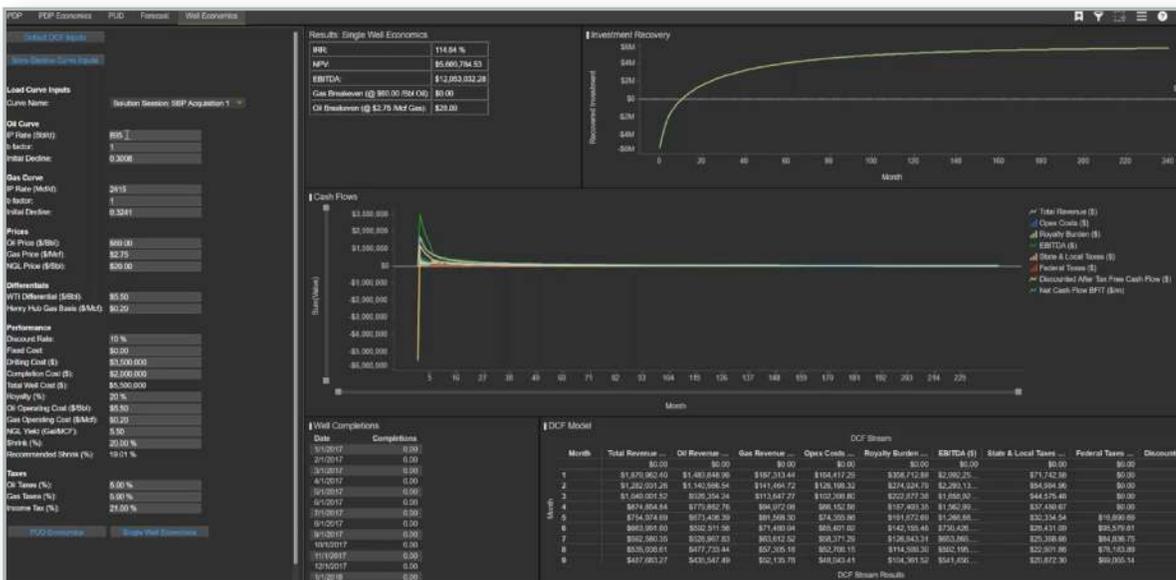


Figure 5

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Conclusions

What is clear from this in-depth analysis of the Saddle Butte acquisition is its' huge potential for future growth and further producer dedications. The area's large acreage dedication, footprint, and varying crude gravities; good downstream connectivity; the large amount of running room available; and the highly favorable well economics at \$28 WTI point to a highly successful and profitable acquisition moving forward.

For further information on Drillinginfo's midstream solutions – Midstream Essentials and Midstream Premier – contact us today.

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