**Case study:** Utah, United States

# Proxima provided quality log data in challenging wellbore, saved 4 days and $55,760 USD over three wells

A customer in Utah planned to drill four closely spaced directional wells with one main and seven secondary hydrocarbon horizons. The intermediate casing was several thousand feet above the first hydrocarbon horizon. Previous drilling experience in the area had unstable formations prone to sloughing and washouts in the open zone immediately below the intermediate casing that led to ledges and bridged sections further along the wellbore. On the first well conventional wireline logging tools were tried but repeated attempts kept bridging off above the target formations leaving the last 800 ft (243.8 m) unlogged. Ultimately, the data was not acquired, and valuable time was lost with attempts to clean up and log the well. Conventional logging tools also posed elevated risks of equipment damage and getting stuck and losing the tools in the hole.

For the next three wells Baker Hughes recommended the **Proxima™ advanced logging service** to deliver high quality data for a safe and fast operation. The Baker Hughes team and the customer determined that the safest and most efficient logging would be with the tools deployed on wireline, inside drill-pipe, and the data would be acquired with real-time surface recording.

A drilling bottomhole assembly was prepared to enable use of the Proxima logging assembly. Pressure equipment was installed at surface to allow for mud circulation if required at any time during the logging operation. The drilling BHA was run in the hole, worked past the hazardous intervals, conditioned the well, and was positioned above the first hydrocarbon horizon.

The Proxima logging string, consisting of multi-array induction, bulk density, compensated neutron and gamma ray sensors, were safely deployed, inside the drill-pipe and through the bit, all the way to total depth. Logging was initially conducted at the industry standard of 30 ft/min (9.1 m/min). A subsequent pass at 60 ft/min (18.2 m/min) showed that high data quality could be acquired at the higher logging speed. This quick evaluation was possible because of the on-the-fly data processing provided by the Proxima service that produced final logs immediately after the run. Logging on the first well using Proxima advanced logging services was completed in 6.5 hours.

On the two subsequent wells the Proxima advanced logging service was deployed using through pipe conveyance and logged at 60 ft/min (18.2 m/min). The average logging time was 6 hours per well for all three wells with high quality logging data safely acquired in every well. This resulted in an average saving of 32 hours per well. For the three wells the total time saved was 96 hours or 4 days compared to conventional logging, resulting in an operational cost saving of $55,760 USD. And most important, critical log data was acquired for the primary and secondary hydrocarbon horizons.

With Proxima advanced logging services, our customer was able to acquire complete, high-quality log data sets, have complete well control assurance, and save time and operational cost in challenging wellbore conditions.

## Challenges

- Hole sloughing and washouts
- Ledges and bridging
- Safely and efficiently acquire high quality log data

## Results

- Safely acquired high quality log data
- Saved a total of 4 days operational time
- Reduced operational cost by $55,760 USD