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Geosteering for Success – Making better drilling decisions with cutting edge technology

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The Trinidad and Tobago energy landscape has seen significant declines in gas production, with major players in the industry returning to negotiating tables to construct a revised framework for the future. The drive to boost production to meet the needs of domestic markets and for foreign exchange, placed a strong responsibility on Subsurface disciplines to bring feasible field developments to fruition.

In March 2020, Shell Trinidad and Tobago Ltd., in partnership with Heritage Petroleum Ltd., announced the Final Investment Decision (FID) for the Colibri Project. This 4 well subsea campaign would connect the Cassra and Orchid fields, situated in Block 22 and NCMA-4 (NCMA), to the domestic and ALNG pipelines. In anticipation of a Q4 2020 spud, the operation to target 3 reservoir intervals, via long, 1500ft horizontal completions, took shape with little room for error.

For success, several challenges needed to be overcome. From the seismic and offset well data, it was clear that these fields presented two stark contrasts: a benign, geologically uneventful overburden, paired with thin, high variability reservoirs. The benign overburden meant that depth calibration could be difficult and solutions to overcome this needed to be sought. At the reservoir, accurate well positioning via well-timed directional decisions would be key to landing and steering each well in an optimal manner. For the first time in T&T, Schlumberger's GeoSphere and GeoSphere HD tools were employed, providing real-time reservoir mapping outputs to inform steering decisions.

A deep, integrated working relationship between the Shell Subsurface team and Schlumberger's Well Placement team, allowed the right experience levels to be leveraged to ensure successful application. Finally, execution would take place under the ominous umbrella of COVID-19, requiring a strong, hybrid arrangement between onsite and now fully remote delivery teams, to ensure no gaps existed and no missteps in decision making took place.