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Cr r nec vlp'qh'Dqt gj qng'Kō ci g'Nqi u'lp'Guvdrkj lpi 'Hcelgu'Ct ej kgevt g=E qpegr wcrif gr quklqpcnO qf grlc pf ''
Ugs wgpeg'Uvt cvli t cr j le'Ht co gy qt mlqt 'Rcd'Uc pf uvqpg.'UwkHlgf . 'Rcnkucp,

"O wj co o cf 'Hclcn³. 'Co o ct 'Cj o cf⁴. 'Tcuj kf 'I kcpk³. 'J co kf 'J wucp³. 'Hctc| 'J cucp'Uk f ks wk⁴. 'cpf 'O wj co o cf 'Tco | cp⁴"

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²Schlumberger, Islamabad, Pakistan

Cdwtcev'

The Sui Field lies in the Sulaiman Fold Belt (SFB) and has been producing from Eocene carbonates which were the primary play. However, with the field now in its depletion phase, the Pab Sandstone is being analyzed and evaluated as a secondary play. The Pab Sandstone could be very deceptive due to high variation in facies from Sulaiman Fold Belt (SFB) to Kirthar Fold Belt (KFB). An attempt has been made in this paper to critically evaluate the Pab Sandstone potential in the Sui Field and further develop an understanding of its depositional setting. The main objectives of this paper are to interpret facies, develop a conceptual model and to establish the sequence stratigraphic framework for the Pab Sandstone by integrating the borehole image log available for Sui-92(U), core data available for Sui-90(P) and Sui-91(P) and one seismic dip line 1975_SW_D.

In this study, the working methodology followed for facies interpretation and depositional analysis includes paleogeographic reviews, facies interpretation on the basis of FMI* (Image data), extrapolation of facies to the available five wells on the Pab level, establish the facies architecture and vertical succession, integrate core, seismic and analogues, and develop the conceptual depositional models. On the basis of log characteristics and channel stacking pattern, facies are divided into zones. The scheme could identify three main zones for the logged interval of the Pab Sandstone: Upper and Lower Pab zones as single-stacked channels, and the Middle Pab zone as multi-stacked channels. Four main facies have been interpreted that include channel sands, point bars, channel lags and background floodplain deposits.

The logged interval for Pab Sandstone was divided into two possible sequences. Sequence 1, starting from the bottom, is a Low-stand Systems Tract (LST) representing basin-ward shift of fluvial facies. It is followed by a Transgressive Systems Tract (TST) which resulted in the deposition of isolated transgressive back-stepping fluvial facies of Unit 3. The TST is capped here by a laterally extensive flooding event which may be interpreted to represent the Maximum Flooding Surface (MFS). The Transgressive Systems Tract (TST) then gives way to a

Highstand Systems Tract (HST) which, due to limited accommodation space, led to the deposition of multi-stacked/amalgamated fluvial channels of Unit 2.

The HST may be overlain by a sequence boundary but no conclusive evidence on Image logs has been found to establish this as a sequence boundary. The HST is then followed by Transgressive Systems Tract (TST) of sequence 2 (Unit 1) which similarly shows isolated back-stepping fluvial facies. Facies models for different sequences were generated which were calibrated with the channel stacking and lateral amalgamation of fluvial channels expected in the different units. An attempt has been made in this paper to apply the working methodology adopted to further develop an understanding of the connectivity of high sinuosity fluvial channels of Pab Sandstone. This working methodology may also be used as a standard template for studies regarding Image-based facies interpretation and development of sequence stratigraphic framework for fluvial systems.

The integration of multidiscipline data in this study, ranging from Image-based data to seismic, provides a key to critically examine the Pab Sandstone and other fluvial plays in the area to develop their hydrocarbon potential. Further, integrating such conceptual-based models into 3D static models (as done in this study) will help us to better delineate reservoir uncertainties for the Pab Sandstone and other fluvial plays in the area. Channel connectivity remains the biggest uncertainty, therefore it is recommended that high-resolution 3D seismic be acquired to give a better insight to the fluvial systems.