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P.O. Box 3524, La Romaine, Trinidad and Tobago, W.I. or UTT Building, Esperanza Road, Brechin Castle, Couva, Trinidad W.I. Website: www.the gstt.org Email: thegstt@gmail.com

Understanding the Net Sand Distribution of the Pliocene Forest FormationTopsets, Southern Basin, Trinidad

Author: [1]Christie Carr
[1]christiecarr101@gmail.com -presenter, Trinidad and Tobago

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This study investigates the net sand distribution of the Pliocene Forest Formation topsets of the Orinoco Delta within a section of the Southern Basin, Trinidad. The primary objectives were to understand the Forest Formation sand distribution and determine its deltaic setting by utilizing well log facies to create gross depositional environments (GDE) for three units of interest, as well as access the value of this study.

Using 50 scanned wells, a 1D analysis was created to understand periods of regression and transgression. From this, 20 wells with the best data were used for the project where units were picked. For three selected units, sand maps were made, and deltaic regime was interpreted based on the geometry. Facies distribution maps were then created using the distribution of well log facies within each selected unit. This was represented by pie charts and was plotted onto a base map. Distinct patterns and features such as estuaries were now visible throughout the study area since each of the facies were linked to an associated depositional environment.

GDEs were created and a sequence stratigraphy interpretation was done to justify the presence of estuary networks by illustrating down cut regions and comparing it to the facies distribution maps.

Finally, the value of this study is such that it can be useful for future projects in terms of understanding reservoir geometry and quality since the facies analysis method gave a more detailed and defined resolution. This is essential when placing a well since despite the net sand map showing obvious thicknesses, it does not consider regime and the presence of estuaries which can affect flow because of there being stacked sequence boundaries. This study has the potential for further development as it can assist in accurately modeling GDEs and reservoir geometry for well placement.