



Attribute-Driven 3D Seismic Insights in Shallow-Water Suriname

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The shallow-water domain of Suriname represents a critical transition zone between the prolific deepwater hydrocarbon systems and the giant onshore Tertiary fields of Tambaredjo and Calcutta. Existing charge models for the onshore accumulations suggest that hydrocarbons migrated both laterally and vertically from the Canje Kitchen through fault networks and carrier beds. In this zone, prospective reservoir units span a wide range of depositional environments—including carbonate patch reefs, fluvial-deltaic complexes, and base-of-slope deposits. These settings indicate the potential of significant accumulations of oil and/or gas are present along the migration routes to the onshore region.

Effective exploration in this geologically complex region requires high-resolution 3D seismic imaging and a suite of advanced interpretational tools. The need for additional coverage of 3D data grows as acreage of contracted exploration blocks expands in this transition zone. Recently, the 2025-2026 acquisition of ~2,000 km² of 3D seismic in shallow water offshore was acquired with the intent to further support exploration in the area. In this study we utilize a merged 3D volume composed of 3 separate Acoustic Impedance Volumes totaling ~17,400 km². This merged dataset covers the majority of blocks 5–15 providing a regional view with improved continuity. From the merged acoustic impedance volume, we applied the use of additional attribute seismic analysis and scientific color maps that enable additional discrimination of key lithofacies and sedimentary features.

While still awaiting a processed volume of the newly acquired 2025-2026 data, we highlight seismic facies that support the rationale for its acquisition and continued exploration to the south. The attribute-enriched data illuminate sediment input points, and south-to-north depositional fairways extending toward the deep basin and how these trends vary along strike (East-West orientation). Additionally, we assess the nature and extent of the Late Cretaceous erosional event that significantly reworked and removed of to 1.7 km of prospective Cretaceous deltaic deposits across ~110 km wide area of the shallow offshore.

Overall, the merged and enhanced volume and subsequent calculation of seismic attributes across the area have facilitated the identification of multiple new exploration leads and significantly refined the stratigraphic framework understanding of Suriname's shallow-water region.