

# Suriname Shallow Water: Bridging the Gap Between Deep Water Successes and Onshore Giants

Kyle Reuber\* TGS; Milos Cveticovic, TGS, Andrew Hartwig, TGS, Henri Houllévigie, TGS

## Abstract

The current distribution of oil and gas fields within the Suriname-Guyana Basin highlights a gap in the discovery trend within the shallow water region of Suriname. Wildcat probes in this gap have returned mixed results as dry or containing shows (Valle, 2023). The objective of this study is to illustrate potential targets and plays in stratigraphically complex Cretaceous channel systems and paleo-shelf/upper slope clinoform packages present within this region. Recently acquired and processed ~15,000 km<sup>2</sup> of 3D data is used for this work, including attribute calculations, window-extractions, and surface mapping.

Previous work has established that the depositional fairways of the paleo drainage routes were variable within time and areal distribution (Reuber, 2024). Input from 7 onshore drainage basins (Nickerie, Coppename, Corantijn, Commenijne, Saramacca, Suriname and Marowijne) can be observed along strike have served as fairways for reservoir packages sourced from the granite-rich Guiana Shield. Numerous episodes of epeirogenic uplift resulted in variable denudation effects for each of the drainage areas (Lujan and Armbruster, 2011) and the subsequent input into the basin. Resolving these fairways in the complex depositional setting is best accomplished using calculated attributes, as amalgamations and meanders are present in the systems. Responses to applied seismic attributes indicate sand-filled channels geometries that can be traced updip. Additionally, clinoform packages intercalated with carbonate units are present in this shelfal position and illustrate the interplay between sea level fluctuations and sediment input to the basin. Early-Late Cretaceous packages of fluvial-deltaic sediments likely play an important role as carrier beds in the migration of oil and gas from the Canje Source kitchen, across the shelf and into the onshore Suriname Tambaredjo and Calcutta Fields. Additionally, normal faults offsetting sedimentary packages imaged in the high-resolution 3D data are the conduits for the migrating oil and gas into the younger T-Sand reservoirs onshore.

These new high-resolution 3D data volumes have permitted an improved understanding of the distribution of reservoir-quality sandstone packages.

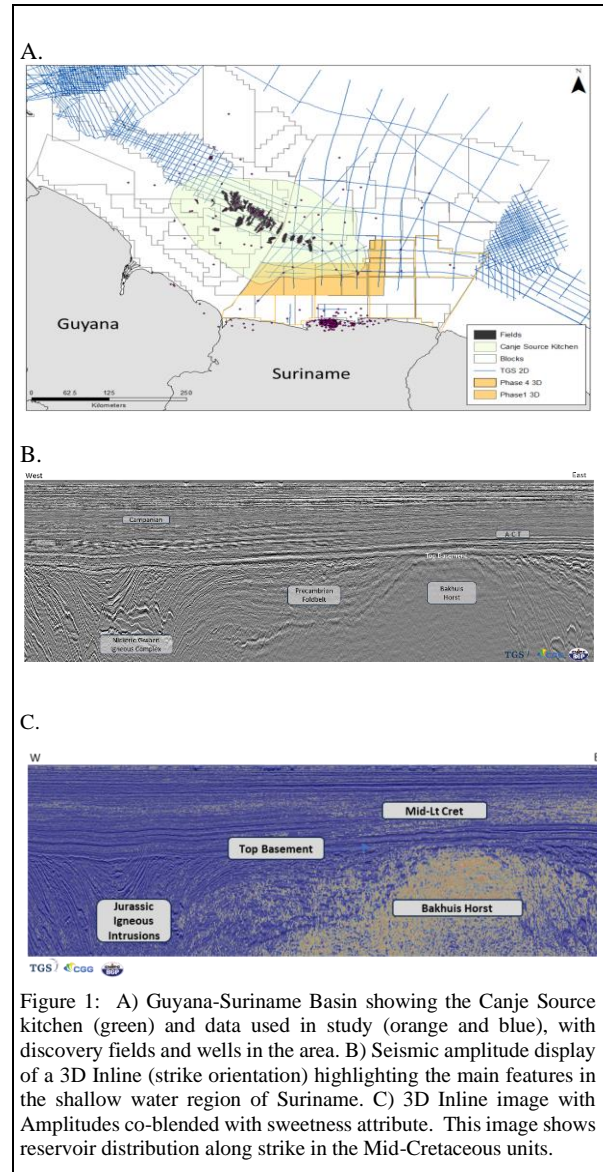


Figure 1: A) Guyana-Suriname Basin showing the Canje Source kitchen (green) and data used in study (orange and blue), with discovery fields and wells in the area. B) Seismic amplitude display of a 3D Inline (strike orientation) highlighting the main features in the shallow water region of Suriname. C) 3D Inline image with Amplitudes co-blended with sweetness attribute. This image shows reservoir distribution along strike in the Mid-Cretaceous units.