Expro Excellence

Restoring production in a mature Brazilian brownfield through integrated PNL interpretation

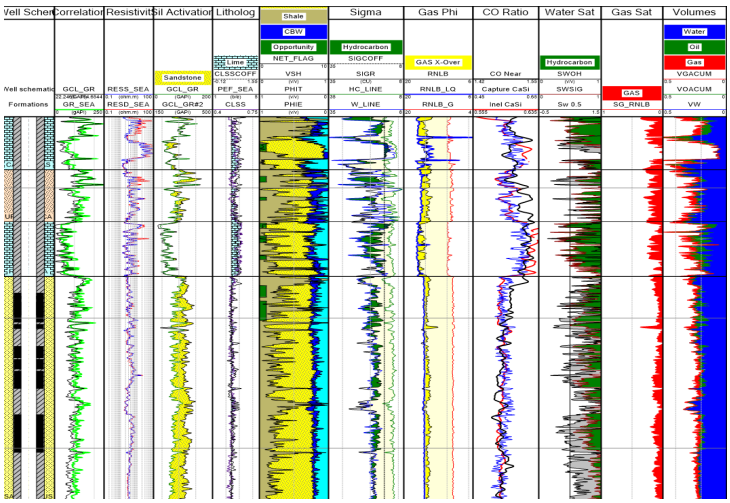
Well Intervention & Integrity

Objectives and background

- A mature field in Southeast Brazil faced significant uncertainty regarding current reservoir saturation and remaining hydrocarbon potential. The well had become inactive and marginally uneconomic after years of production
- The operator aimed to identify viable opportunities for reactivation through reperforation and reservoir re-evaluation. However, conventional open hole petrophysical interpretation presented considerable uncertainty due to:
  - Mixed carbonate–clastic depositional environments
  - Complex geology, including calcarenite platform deposits interbedded with fluvial sandstones and shales
  - Presence of low-resistivity formations
  - Potential reservoir depletion from offset well production
- To proceed with confidence, the operator required a reliable method to evaluate reservoir saturation and accurately identify remaining hydrocarbon-bearing intervals and potential bypassed pay zones

Expro Excellence

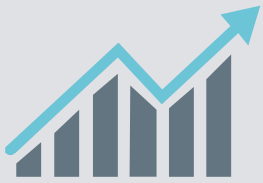
- Expro deployed the **Reservoir Analysis Sonde (RAS)** using both:
  - **Sigma mode**
  - **Carbon/Oxygen (C/O) mode**
- An integrated interpretation workflow was executed through Expro's **QikView platform**, combining multiple data sources:
  - Pulsed neutron measurements
  - Fluid phase saturation analysis (Sigma & C/O)
  - Gas saturation evaluation using near-to-long burst ratios
  - Open hole petrophysical data
  - Geological and reservoir insights
- Despite the complex lithological environment, the integrated approach successfully distinguished lithology effects from movable hydrocarbons, enabling identification of intervals with the highest production potential
- The logging operation was conducted safely and efficiently, delivering high-quality data with excellent repeatability across the entire interval
- Close collaboration with the client's subsurface team ensured seamless integration of interpretation results with geological and production data, supporting informed decision-making for reperforation
- Expro acknowledges the client's support and engagement, which were instrumental in achieving a successful outcome and maximizing the value of the integrated reservoir evaluation



Value to the client

- Based on the integrated interpretation, the operator perforated the zones identified as having the best production potential
- Subsequent production testing confirmed:
  - Successful return of oil with minor gas
  - Validation of the interpretation methodology
  - Presence of bypassed hydrocarbons within the mature field
- These actions collectively reduced uncertainty in reservoir reactivation decisions, enabled the restoration of production from a previously inactive well, identified remaining hydrocarbon potential in a mature brownfield asset, and increased confidence for future field-wide re-evaluation campaigns

Enhanced production



Insight

To find out more, contact **wellintervention@expro.com** or visit **www.expro.com/wellintervention**

Copyright 2026 Expro. All rights reserved. Date 05/2026 | Revision 1.0