REAL TIME WELL INTEGRITY MANAGEMENT – A PATH FROM R&D TO FIRST DEPLOYMENT

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1st Subsea & Drilling Brazil Conference – 2019
WELL INTEGRITY SURVEILLANCE

Main goal

Ensure, during its lifetime, monitoring the parameters that affects the well barrier elements, considering the best practices of the industry (translation from Sistema de Gerenciamento da Integridade de Poços SGIP).

How to implement?

Provide a process of monitoring well integrity through advanced analytics of the production data linked with real time simulations of the main elements that affects the well behavior (fluid flow, structural behavior and reliability).
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**Structural Integrity**

“Structural integrity is the ability of an item—either a structural component or a structure consisting of many components—to hold together under a load, including its own weight, without breaking or deforming excessively.”
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Timeline of main events and initiatives

2013 PWDa
2014 PoçoWEB (PW)
2015 SGIP
2016 RTO-Live
2017 SISP (PortalCTPS)
2018 CSB (PW)
2019 SCORE (PW)

R&D Project #1
Reliability of barriers

R&D Project #2
Real time well structure analysis

R&D Project #3
Real time tubing string diagnostics

2017 WELL HANDOVER (PW)
2018 myBarrier
2019 PWPa, SCORE TR

EcoTec - PETROBRAS

WIS LIVE
WELL INTEGRITY SURVEILLANCE

Development of a Digital Twin for well integrity surveillance in real time.
• Simulate following operations and evaluate the impact on well’s integrity.
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Wel conceptual view

1. Transient Fluid flow
2. Structural behavior
3. Tubing leak detection
4. Well barrier reliability
5. Real time

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Global view of initiatives

- Equipment and tubing: PWPa, myBarrier
- Production panel
- Annular monitoring
- GT + P&D
- Data streaming: WIS Live, NodeRed
- Structural simulation: SCORE TR
- Production data

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