

Brazil

Multilaterals reduce environmental impact in the Amazon

Strategy reduces operator costs

CHALLENGE

Increase production and reduce costs and environmental impact

SOLUTION

Implement multilateral well strategy to

- Minimize wellsite footprint
- Allow larger reservoir drainage volume from single surface location

RESULT

Delivered three dual-lateral wells, which resulted in:

- Reduced environmental impact in the Brazilian Amazon
- Cost-efficient production rate increase

Overview

An operator sought to develop a field in the Amazon Basin, one of the world's most ecologically sensitive regions. The operator faced the dual challenge to increase production and minimize environmental impact. Traditional well designs required extensive surface infrastructure, which would disrupt local wildlife habitats. To overcome this, the operator adopted a multilateral well strategy to significantly reduce surface disturbances and preserve the Amazon's biodiversity.

Challenge

Energy resource development in the Amazon presents unique challenges attributed to the region's complex ecosystem, dense forest coverage, and strict environmental regulations. Conventional drilling methods require multiple well pads, which can increase land use, potential contamination risks, and the likelihood of negative impact to native plants and animals. Furthermore, access to drilling sites is difficult, which adds logistical constraints and the potential for increased carbon emissions caused by transportation. The key challenge was to implement a solution that would minimize the number of well pads and ensure that operations complied with environmental guidelines without impact to the production targets.

Solution

To address these challenges, the operator implemented multilateral well designs that allowed multiple reservoir zones to be accessed from a single surface location. The operator drilled and completed three dual-lateral wells in the field. The first two dual-lateral wells placed horizontal legs into two different reservoir targets. The third dual-lateral was a vertical well design wherein a horizontal lateral was added to access a separate reservoir target.



Result

Three dual-lateral wells were successfully delivered with significantly reduced surface footprint. Through the elimination of several drilling pads, the operator minimized the need for road construction and associated transportation, which significantly lowered the impact to local habitats. The lateral production was commingled with well production rates that averaged 1.75 times more than a typical horizontal well. Additionally, a drilling cost reduction of 29% was realized compared to two horizontal wells. Overall, the use of multilateral wells proved to be an effective strategy to balance resource development with environmental stewardship in one of the most sensitive ecosystems on the planet.



The elimination of several drilling pads minimized road construction and transportation and significantly reduced impact to local habitats.



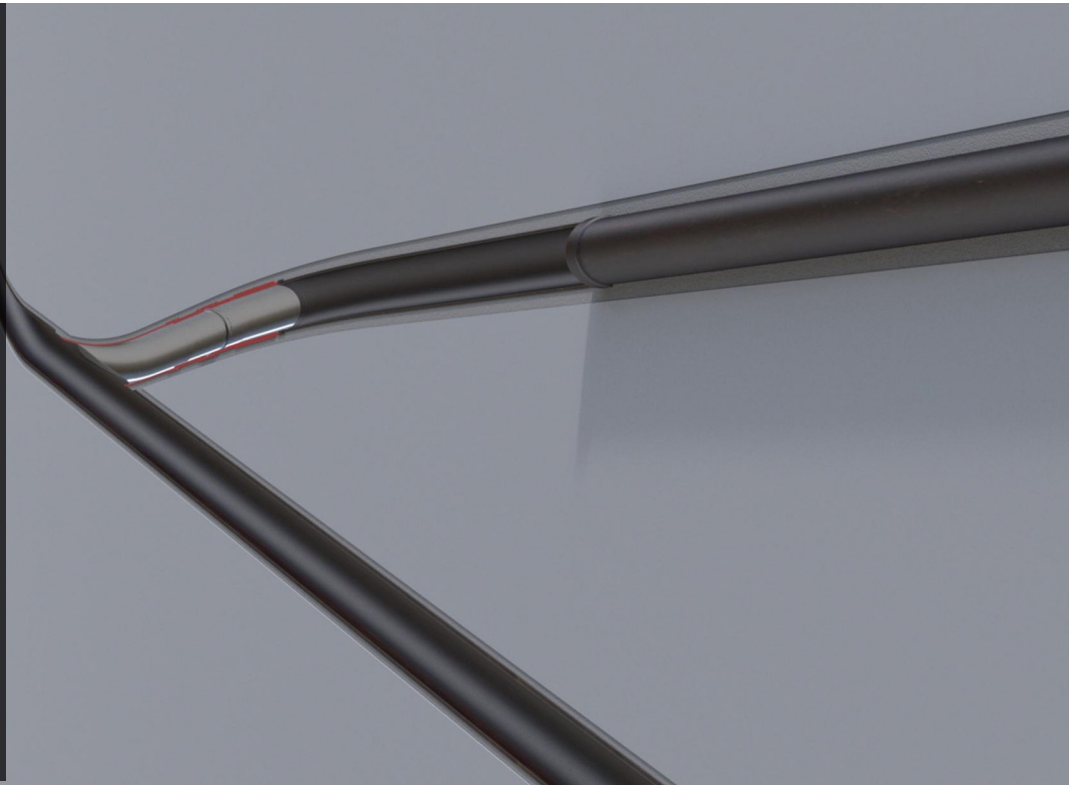
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dual-lateral wells
delivered in the field



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cost-efficient
increase to
production rate



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