

Enhancing Late-Life Asset Economics: Cost-Effective Cemented Monobore with Resin Sand Consolidation in Infill Oil Producer Wells

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Abstract

Mature oil fields with extensive production platforms face unique challenges as they approach the latter stages of their lifecycle. This study examines the increasing complexities associated with sand production, isolated hydrocarbon pools, and complex reservoir targets, which collectively impact operational efficiency and elevate operational expenditures (OPEX). As hydrocarbon pools become progressively compartmentalized, recovery optimization requires different approaches in reservoir management and well design. Having said that, the economic viability of infill drilling diminishes, making cost-effective extraction strategies essential. This paper discusses field-specific case studies, evaluates strategies to mitigate sand production, and explores innovative solutions to reduce well cost, aiming to support sustainable and profitable production from aging assets.

This presentation aims to address practical recommendations and best practices for implementing cemented monobore completions with resin sand consolidation in late-life assets, focusing on reservoir characteristics, operational constraints, and economic considerations. The methodology involves a cost comparison between cemented monobore with resin sand consolidation and traditional cased hole gravel pack, analyzing material costs, equipment needs, and operational expenses. It also examines operation durations, evaluating time efficiency and the reliability of resin consolidation based on past success cases. The comparison helps in understanding the efficiency and time-saving potential of the chosen method. The approach offers economic advantages by enhancing well integrity, minimizing sand production, and reducing maintenance costs.

Implementing a Cemented Monobore with Resin Sand Consolidation in oil producer wells presents significant economic advantages. This innovative approach ensures robust well integrity and enhances reservoir productivity by consolidating the nearby wellbore, thereby minimizing sand production. The utilization of resin sand consolidation not only fortifies the wellbore structure but also mitigates the risk of sand erosion, reducing costly maintenance and enhancing production efficiency. Moreover, the bottoms-up production strategy optimizes reservoir recovery rates while avoiding crossflow issues between different zones, ensuring maximum yield from the reservoir. This integrated solution not only ensures operational efficiency but also safeguards long-term profitability in oil production.