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## Abstract

**Objectives/Scope:** This study discusses a new concept and involves a process change while drilling multi-laterals enabling operator to drill the respective laterals using same BHA in a simplified cost-effective technique. The proposed concept will eliminate the requirement of a whipstock while performing open-hole sidetrack and in addition, will significantly reduce open-hole exposure time resulting in increased operating efficiency.

**Methods, Procedures, Process:** Traditionally, most open-hole sidetracks are kicked off using whipstocks or from a cement plug; while both techniques are proven, they are also complex requiring multiple trips and extended exposure time in the open-hole with a resultant high frequency of stuck pipe issues encountered which culminates in a very costly for operators. Accordingly, a new concept is being proposed for creating a sidetrack which involves creation of a localized ledge across the KOP using an RFID activated under-reamer after the initial pilot hole is drilled. The RSS system is subsequently utilized to initiate a sidetrack through the newly created ledge.

**Results, Observations, Conclusions:** The proposed technique has a relatively low implementation cost as it requires only the incorporation of a high performance RFID activated under-reamer on the drilling BHA. However, the anticipated benefits is substantial as a significant reduction in operating cost will be achieved given that the technique will minimize BHA trips resulting in a reduced exposure time of the open-hole which will also reduce the frequency of stuck point issues in the open-hole. The best results are anticipated while drilling multi-laterals with KOP/ ledge across a horizontal section which will enable the RSS to initiate the sidetrack on the lower side of the wellbore.

**Novel/Additive Information:** RFID technology provides unlimited activation and deactivation of the under-reamer and will allow operators to precise determine the placement of the ledge for the defined operation. Customized square-shaped cutter-blocks is used to ensure sharp edges of the ledge. The proposed technique is limited to applications where the operator needs access to the interval beneath the KOP.