

# Increased Casing Protection Measurably Reduces Metal Collected

## Casing Protection for Development Wells

An operator required casing protection while drilling offshore development wells in 1,100m of water. The 12-1/4" X 14-3/4" and 9-1/2" sections were drilled with 5-7/8" range three (R3) drill pipe. Limited casing logging services were available to the operator. This required a pragmatic approach to casing protection by monitoring metal returns at the ditch magnets.

## NRPs Installed for Casing Protection

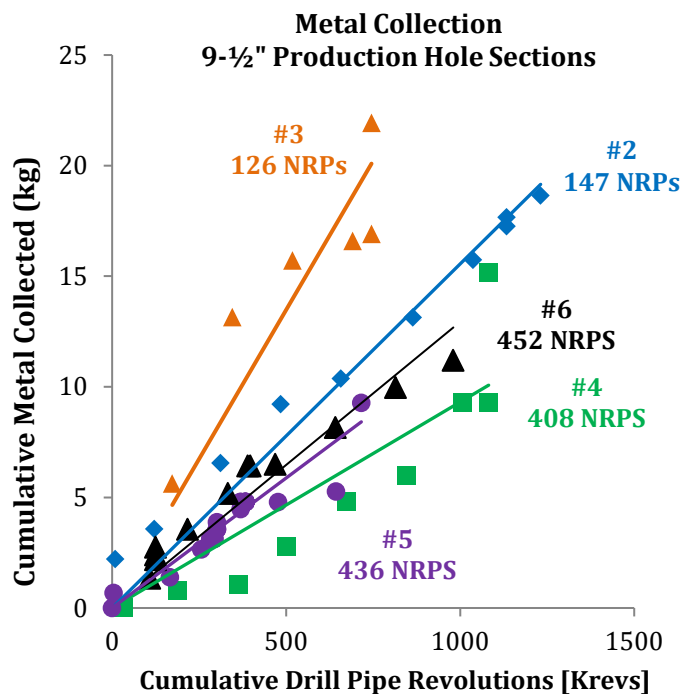
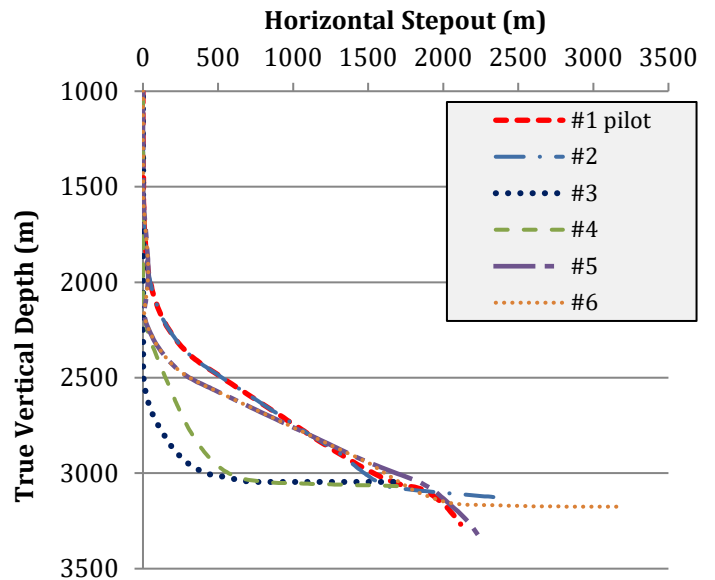
Drilling of six development wells occurred over a period of five years. Starting with 147 Non-Rotating Protectors (NRPs) installed at one per joint on pilot well (#1), the metal collected at the return flow line ditch magnet was carefully monitored. While the maximum analyzed side force was usually lower than 2,000 lbf/joint (except for well #6, where it was close to 3,000lbf), the use of R3 drill pipe raised concern of casing contact mid-span along the pipe. On wells #3-6, two NRPs per joint were installed: one near the tool joint and one mid-span on the 14.4m joints. The additional NRP further alleviated concerns of casing wear as well as mitigated the effects of buckling in the horizontal sections.

## NRPs Reduce Metal Collections

Increasing the quantity of NRPs corresponded to a lower metal collection trend. By carefully monitoring the metal collected, the operator was confident of casing integrity in areas of NRPs. This saved the cost of logging the casing of these wells, which can be a costly and time-consuming rig operation.



**Location:** Latin America  
**Well Type:** Directional  
**Objective:** Casing Protection  
**Solution:** NRPs  
**Benefit:** Reduced Metal Collection



Non-Rotating Protectors  
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