

FLOAT SHOE CASE STUDY

SUMMARY

Summit Casing Equipment completed an evaluation of casing run data in order to assess the robustness of float equipment noses made of concrete. The evaluation was conducted by examining a float shoe concrete nose after being exposed to multiple high-impact forces due to casing reciprocation. The evaluation confirmed that the float equipment with the concrete nose remained intact as it was before going downhole. The robustness of the concrete nose is due to Summit's proprietary concrete blend, engineered and tested to provide high strength, eliminate weak points, prevent crack formation and propagation, and provide PDC drillability and high-impact resistance.

CASING RUN DATA

Casing was run into a dry hole to a vertical depth of 847 feet. Upon reaching 847 feet, the casing could not gain any additional depth and total depth (TD) was not reached. In hopes of gaining depth by breaking through any obstacles and reaching TD, the casing string was lifted and dropped multiple times. The weight of the casing was 87 pounds per foot (not accounting for the weight of the equipment on the casing string), resulting in 73,689 pounds of casing weight being dropped on the float shoe concrete nose each time. After more than three hours of attempting to gain depth, the casing was pulled from downhole with the float shoe entirely intact as it was before going downhole.

CONCLUSION

Summit's float shoe concrete nose design survived severe impact forces resulting from over three hours of continuous reciprocation. The nose remained intact with no structural or cosmetic damage due to the material properties of Summit's proprietary concrete blend, which provides high strength, eliminates weak points, prevents crack formation and propagation, and provides PDC drillability and high-impact resistance.



WELL CONDITIONS

Surface casing: 13-3/8 inches

Well type: Vertical well

Depth: 847 feet

Centralizers used: 12 centralizers and two cement baskets

WELL SITE INFORMATION

Location: Monroe County, Ohio

Time downhole: Over three hours

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