

MetalSkin Cased Hole Liner Isolates Perforation Clusters in Old Well to Restore Casing Integrity and Facilitate Re-Frac

Objectives

- Re-frac an eight-year-old extended-reach shale well
- Evaluate the condition of 5 1/2-in. casing with existing perforations from a previous frac operation
- Determine feasibility of re-lining casing and isolating existing and future frac stages to maximize productions results

Our Approach

- A Weatherford crew mobilized to the wellsite and ran a smooth-OD watermelon mill and sand vacuum tool to clean and dress the casing ID and remove downhole debris before running wireline tools in the hole.
- Next, a Weatherford wireline crew used a downhole tractor to run a suite of cased-hole logging tools to total depth. The logs enabled the operator to gauge the casing ID, confirm that the casing was free of debris, and evaluate any defects or corrosion in the casing wall.
- Finally, a Weatherford Tubular Running Services crew ran and installed the 4 1/4 × 5-1/2-in. 17 lb/ft MetalSkin solid expandable liner system to reline the existing 5-1/2-in. 17 lb/ft casing.

Value to Customer

- The MetalSkin cased-hole liner system enabled the operator to restore integrity in previously perforated casing.
- The Weatherford crew isolated the previous five-stage fracturing operation, which enabled the operator to conduct a subsequent eight-stage frac operation.
- By installing a 4 1/4 × 5 1/2-in. MetalSkin liner system instead of relining the existing casing with a conventional 3 1/2-in. cemented tubing string, the operator obtained 3/4 in. of additional ID, which facilitated higher flow rates and pressures for fracturing and production operations.



Weatherford coordinated services from multiple product lines to isolate older perforations from the main wellbore.

LOCATION

Delaware Basin, New Mexico, USA

WELL TYPE

Onshore, shale-oil producer

FORMATION

1st Bone Spring

HOLE SIZE AND ANGLE

8-1/2 in., 83°

HOST CASING SIZE AND TYPE

5 1/2-in., 17 lb/ft L80 casing from surface to 10,275 ft (3,132 m) MD

EXPANDABLE LINER SIZE AND TYPE

1,718 ft of 4-1/4 × 5-1/2 in., 17 lb/ft MetalSkin[®] cased-hole liner

POST-EXPANDED SETTING DEPTH

8,344 to 9,984 ft (2,543 to 3,043 m)

HYDRAULIC FRACTURING PRESSURE

5,500 psi (37.9 MPa) at surface

TEMPERATURE

150°F (65.5°C)

PRODUCTS/SERVICES

- MetalSkin cased-hole liner system
- Tubular Running Services
- Wireline Services

