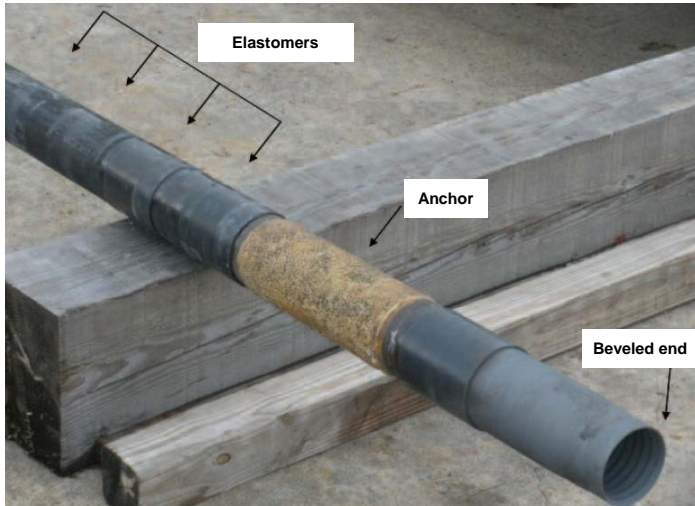


Custom MetalSkin® System Restores Casing Integrity, Enables High-Pressure Fracturing Operations up to 9,900 psi



Weatherford increased the pressure rating of the standard MetalSkin cased-hole liner system by wrapping the OD with elastomers.

Objectives

- Remediate a leak in the curve of a 5 1/2-in., 17.0-lb/ft production casing string.
- Confirm casing integrity for future fracturing of the lower zone by performing a high-pressure test.

Our Approach

- Weatherford provided a custom-designed MetalSkin cased-hole liner system with the expandable connections removed and the entire OD wrapped by elastomers to support higher internal pressures than a standard MetalSkin system.
- The Weatherford crew ran an assembly of smooth-OD mills 1/16-in. (1.6-mm) larger than the drift of the parent casing to properly gauge and dress the casing ID before running an expandable liner.
- After the cleanout using the mills, a multi-arm caliper was run to confirm the condition of the casing and its ID, the correct setting depth for the expandable liner system, and the correct size for the expandable cone to achieve proper anchoring and sealing with the expandable liner.
- The crew deployed the 4 1/4- × 5 1/2-in., elastomer-wrapped single joint of MetalSkin cased-hole liner to isolate the casing leak and enable future high-pressure work.

LOCATION

West Texas, USA

WELL TYPE

Onshore, oil and gas

PARENT CASING

- Size and type: 5 1/2-in., 17.0-lb/ft P-110
- ID: 4.892 in. (124 mm)
- Drift: 4.767 in. (121 mm)

EXPANDABLE LINER

- Size: 4-1/4 × 5-1/2 in., 10.69 lb/ft
- ID: 4.240 in. (108 mm)
- Drift: 4.198 in. (107 mm)
- Pre-expansion length: 19 ft (5.8 m)
- Post-expansion length: 18 ft (5.5 m)
- Shrinkage: 4.40%
- Setting depth: 9,889 to 9,907 ft (3,014 to 3,020 m)

PRODUCTS/SERVICES

- Custom MetalSkin cased-hole liner system
- Tandem, smooth-OD watermelon mills
- Handling equipment including elevators, slips, and crossovers



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Our Approach (continued)

- The crew tripped the MetalSkin liner to the setting depth through a maximum dogleg severity of 13°/100 ft (30 m) and installed the liner in a deviation of 63° by applying hydraulic pressure. The elastomer wrap provided backside support to the expandable liner as internal pressure increased during the pressure test.
- A pressure test with 9,900 psi (68.3 MPa) at the liner validated integrity and verified pressure capabilities 88% higher than the standard MetalSkin liner system, which is rated to 5,270 psi (36.3 MPa).
- The entire installation was completed in a total of 13 hours.

Value to Client

- Using the custom-designed, elastomer-wrapped MetalSkin cased-hole liner system enabled the client to remediate the casing leak and restore integrity with a longer-lasting solution than cement squeezes.
- The specialty MetalSkin liner system provided high pressure capabilities for future fracturing operations and a larger pass-through ID than scab liners for pumping high volumes of fracturing fluids.

* MetalSkin is a registered trademark of Weatherford in the US and the United Kingdom.

