

INTEGRITY CASE STUDY SPECTRAL LEAK DETECTION [SPEC-LD*]

Challenge

A sustained B-annulus pressure of 65 psi in a production well indicated a possible well integrity problem. Sustained annulus pressures [SAP] are often caused by poor cement bonding between the casing and the formation, or packer, casing or tubing leaks that allow the migration of fluids from the reservoir. Well safety regulations stipulate that sustained annulus pressure must be eliminated to maintain well integrity.

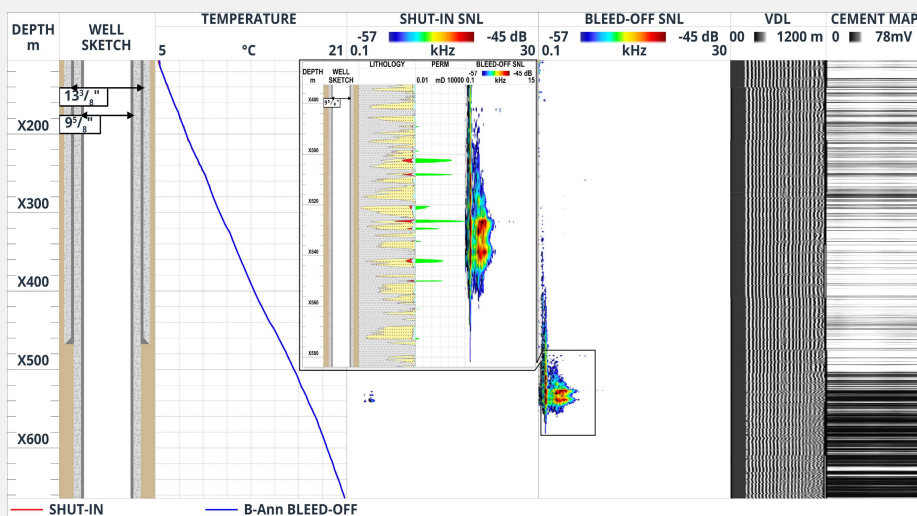
Solution

TGT conducted a spectral leak detection [SPEC-LD] survey, in two modes:

1. at the 65-psi surface pressure in the B-annulus
2. while bleeding the pressure off.

The SPEC-LD survey detected a cement integrity failure above a gas-bearing reservoir that was causing gas migration to the surface through the B-annulus and, consequently, a casing pressure increase.

Spectral technology locates source of sustained annulus pressure, enabling effective remediation and complete restoration of well integrity.



The SPEC-LD survey indicates gas migration from X650 m to X500 m is the cause of SAP in the B-annulus. The SPEC-LD service is designed to locate fluid flow behind multiple casing strings and combines measurements from high-definition spectral noise and high-precision temperature technology.

Outcome

The client worked the well over by squeezing cement through additional perforations above the gas source zone, which eliminated the sustained annulus pressure.