CASE HISTORY

Well Intervention: Abandonment Plug

High-Expansion Inflatable Element Used In Deepwater P&A

Coiled tubing operation requires a high-expansion inflatable packer for cement placement.

CHALLENGES: Set an inflatable packer in 9-5/8 in. casing in order to circulate the 13-3/8 x 9-5/8 in. annulus to spot cement. Set the packer using coiled tubing, working off of a MODU-class vessel with a workover riser package. The BOP on the riser package has a 4.06 in. restriction. The inflatable packer is required to set inside a 8.535 in. ID and hold pressure in excess of 1,500 psi from below the packer to circulate and spot cement.

SOLUTION: Run a Single-Set Inflatable Packer with a 3-3/4 in. element. Inflate the packer and circulate to clean the 13-3/8 x 9-5/8 in. annulus. Once the annulus is clean, pump and spot cement. Pump 27 barrels / 500 ft of cement out the 9-5-8 in. casing into the 13-3/8 in. annulus. Wait 24 hours for the cement to set up and perform a 1,000 psi pressure test to satisfy regulations. Release from the inflatable packer using a straight pull release safety joint. Repeat for three more zones.

RESULTS AND BENEFIT: The volume and pressure needed to clean the annulus prior to spotting cement was more than planned. The operator pumped 1,200 bbls of fluid at a maximum of 3,000 psi when circulating to clean the annulus. The operator was able to circulate out the 13-3/8 x 9-5/8 in. annulus and spot cement at all required depths. The standard approach would have been to mill out the casing sections, set inflatable plugs, and dump cement. By using a high-expansion inflatable packer, the cost of the P&A was significantly reduced.