OBJECTIVE

Helix Energy Solutions Group, Inc.’s well intervention subsidiary, Helix Well Ops (U.K.), was contracted by Talisman Energy Inc. to execute a series of well maintenance, production enhancement, and decommissioning workscopes on five different wells in the UKCS sector of the North Sea in the winter of 2012. Over the course of the 68-day operation, Helix Well Ops successfully performed the following tasks on Talisman fields:

Quick Stats

Highlander: Remedial subsurface safety valve operations

Tartan: Well suspension and well integrity operations

Enoch-South Wood: Three plug and abandonment (P&A) operations with wellhead removal

Tweedsmuir: Pumping and scale-squeeze operations

Claymore: Mechanical repair, well maintenance, and integrity operations
TECHNOLOGY

Helix Well Ops carried out the Talisman operations on the monohull intervention vessel MSV Seawell due to her ability to support multiple work programs and transit quickly between the different well sites in the program. Subsea, Helix Well Ops’ 5-⅛” Subsea Intervention Lubricator (SIL) was used throughout the campaign to facilitate tree and well access in smaller-bore installations. Due to the Tartan well being a Horizontal Christmas Tree (HXT) rather than a Conventional (Deul-bore) Christmas Tree, the larger 7-⅛” SIL was necessary for this well intervention well-work, in order to access the well and plug and suspend the well safely.

OPERATIONS HIGHLIGHTS

Highlander Remedial Subsurface Safety Valve Operations

- 13.4 days in field
- Deployed and tested the Subsea Intervention Lubricator (SIL) in order to conduct light well intervention
- Safety valve hold-open sleeve successfully installed, and two contingency packers run

Results: The primary objective of setting a sleeve to hold-open the TRCSSV was successfully completed. However, due to an obstruction in the well, the secondary objective of logging and re-perforating was aborted.

Tartan Well Suspension / Well Integrity Operations

- 15.4 days in the field

Results: Using slickline and e-line tooling, Well Ops successfully accessed the Tartan well, set plugs and suspended the well with minimal downtime.

- Slickline set plug and prong set via slicking in the tailpipe nipple at 13,499ft
- Slickline set plug and prong in the TRCSSV nipple at 662ft
- E-Line set ‘environmental’ Retrievable Bridge Plug (RBP) below the tubing hanger at 450ft

Enoch/South Wood P&A Operations with Wellhead Removal

- 15 days in the field

Results: Completed the permanent abandonment of 3 wells and temporary and permanent guide-base recoveries.
**Tweedsmuir: Pumping and Scale-squeeze Operations**

- 7.5 days in the field
- Successfully spotted 1st stage of Chemical Dissolver soak
- Conducted survey work of Manifold during 1st stage soak period
- Flush 1st stage and spot 2nd stage of Chemical Dissolver
- Pump Scale Squeeze treatment
- Flush 2nd stage of Chemical Dissolver

Results: Successfully carried out a scale squeeze of the TP1 well, along with a chemical dissolver soak of the Tweedsmuir Production Manifold Multi-Phase Flow Meter (MPFM) and general survey work of the manifold.

**Claymore: Mechanical Repair, Well Maintenance, and Integrity Operations**

- 14.9 days in the field
- Intervened well & confirmed well was sub-hydrostatic
- E-line & Archer Calliper run-in-hole (RIH) to obstruction / parted tubing @ 4250ft – tubing integrity above the Hold Up Depth (HUD) appeared intact
- Recovered redundant spool pieces

Results: Due to downhole problems it was not possible to install barriers to allow the removal of the old tree. In-hole work gathered essential information on the obstruction (parted tubing) to allow Talisman to plan future operations. All spools were successfully recovered.

**CAMPAIGN SUMMARY**

**Mobilization**

- Five mobilizations in total
- Full demobilization of 5¼” SIL in order to mobilize 7½” SIL for Tartan well
- P&A phase included full vessel demobilization of equipment to accommodate key equipment for well abandonment
- A variety of Trees intervened through during the campaign: Cameron; FMC and GE (Vetco)
- GE (Vetco) and Drill-Quip wellheads during P&A well-work
Well Work Completed

• 3 LWI (Well Maintenance & Production Enhancement)

• 3 wells P&A’d (Decommissioning)

• 1 well scale-squeeze treatment (Production Enhancement)

CONCLUSION

Helix Well Ops (U.K.) successfully executed the cold weather (December to February) well campaign with a total uptime of 74.8 percent (49.5 days) in water depths ranging from 90m – 141m. A variety of subsea well operations were carried out during the campaign including three light-well intervention operations, three decommissioning operations and one well scale-squeeze treatment carried out for production enhancement. Additionally, Helix Well Ops was able to access all of Talisman’s subsea wells which featured a variety of Christmas trees including models fabricated by Cameron, FMC and GE (Vetco). These work scopes were supported with Saturation Diving operations using the vessel’s onboard 18-man saturation diving complex. In the supplier performance survey completed at the end of the campaign, the client reported excellent performance for service quality, management, planning and delivery.