



The state-of-the-art Well Enhancer, due on the market by the end of next year, will be 'a much bigger beast' than Well Ops' stalwart North Sea sister vessel Seawell (inset).

Leading the LWI pack

With the subsea light well intervention (LWI) market gathering momentum, and a raft of new players joining in, **Steve Sasanow** sounds out Well Ops, the founder of this specialist niche and still the acknowledged leader of the pack.

Production from subsea wells has been on an inexorable rise since the beginning of the new century. In the period 2001-2005, according to figures provided by Infield Systems, roughly 250 new subsea wells per annum were added to the world inventory, while in the period 2007-2011 that figure will jump to an average exceeding 450 new wells per year. In the total period – from 2000-2011 – over 4100 new subsea wells are expected to have been drilled and completed.

Another notable figure relates to rig rates. For sixth-generation deepwater units, the current charter rate is on or about \$500,000/day. Even with more than 100 new rigs due in the market – only some are deepwater semis and drillships – that rate is not expected to shift soon.

There is one obvious corollary between

new subsea wells and rig rates: that is that new wells will be more expensive to drill. There is another less obvious one. With so much offshore production dependent on subsea wells and so much rig time devoted to drilling development wells, will there be enough rig time available for intervention?

This question, not dissimilar to one which must have been asked at an earlier time, is whether there is the demand for light well intervention (LWI) that many people believe exists? The assumption that rigs have been carrying out a significant amount of intervention work on subsea wells might be thrown into question.

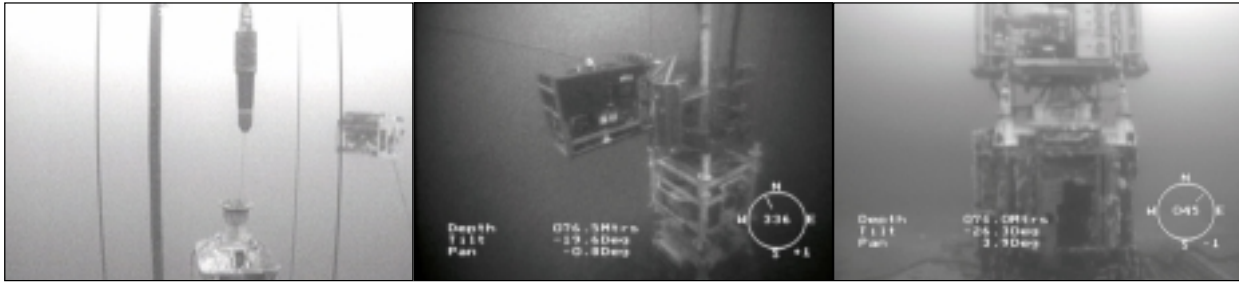
The belief that this market demand exists has created a whole raft of new players who want to compete in the niche market of subsea LWI, ie rigless

production logging and well maintenance. Still leading the pack, though, is the company which essentially created this market and which has gathered the most experience in this field – Well Ops (*see – www.HelixESG.com/WellOps*).

If Well Ops has had any problem over the years, it is most likely one of identity. Starting out in life as an operational division of Stena Offshore back in the late 1980s, it later became part of Coflexip-Stena, then part of Technip, until it was acquired in 2002 by Cal Dive International – now Helix Energy Solutions – and renamed Well Ops.

This is now an international operation under the watchful eye of Bill Morrice, now a Helix divisional vice president, but who had long been the general manager in Aberdeen. Operations are now in the North Sea, the Gulf of Mexico and Australian waters, the latter following Helix' acquisition of Seatrac earlier this year.

It was back in the mid-1980s when subsea production was just becoming accepted that Stena Offshore perceived that there might be a market for carrying



Seawell's lubricator system being deployed onto the tree.

out wireline interventions on subsea wells without using a rig. So it ordered a pair of state-of-the-art vessels, designed and built at Sunderland Shipbuilders in the UK – *Seawell* and *Wellserver*. They were capable of carrying out a range of offshore and subsea operations, including wireline intervention using a subsea lubricator run through its moonpool (*OE* October 1987).

Stena's market analysis on the future growth of subsea production was pretty much spot on, but it could never have figured on two factors which would have a dramatic impact on the business case for the two vessels.

First, charter rates for drilling rigs were depressed for a long period of time making it difficult to make a case for using a monohull to carry out intervention work. Such a vessel would always have been

limited in what it could do downhole.

Second, and more importantly, it was difficult to convince operators of the economic case for carrying out well interventions at all. 'How many more barrels would be produced at how much per barrel' was never a calculation that could be made easily. In addition, the idea that there would be 10 days of logging operations per well per year never materialised and this remains the case.

The result was that *Seawell* which carried out its first well operation in 1987 did not have a full year of intervention work until 2004 and continues to carry out some subsea construction work between well campaigns every year. Its sister ship, *Wellserver*, in spite of its name, has never done a day of well work in the 20 years since it was launched and, in fact, has

never had a derrick installed on its deck. It remains part of Technip's offshore construction fleet.

Despite the fact that a real commercial market for subsea well intervention did not materialise until more than a decade and a half after *Seawell* was launched, the vessel proved the efficacy of the operational aspects of non-rig intervention. While the majority of the work done by the vessel was production logging, it has carried out many other tasks – downhole safety valve testing, emergency well control, perforation, coil tubing operations, et al.

It also proved to be a useful tool, facilitated by its permanent saturation diving system, for subsea field abandonment work, beginning with Hamilton Brothers' Argyll-Duncan-Innes complex back in 1993 (*OE* May 1993). Over the years, *Seawell* has been used for the abandonment of Angus (Amerada Hess), Staffa (Lasmo), Emerald (Midland & Scottish Resources), Northeast Frigg (Elf Norge), Donan (BP), Durward/Dauntless



How Well Enhancer's riserless intervention system will be deployed onto a subsea tree.



(Hess), and Blenheim-Bladon (Talisman) among others. It has also carried out tree recovery programmes for Hess and Shell which might be seen as the forerunner of

Divers working in IRM mode from the multi-service Seawell.

the current trend for non-rig, or 'tree by wire', installation.

The problematic well intervention market saw a dramatic change three years ago when Statoil decided to embrace subsea LWI with a passion as part of its Subsea IOR initiative (OE February). A key element of this programme is to raise the recovery rate from subsea wells from 45% to 55% with LWI an important tool.

Statoil's 180-day contract with Well Ops altered the market dynamics. Well Ops'

main existing client, Shell UK Expro, suddenly found itself without an intervention contractor. It was driven to secure a long-term contract for *Seawell* – five years for 180 days plus options for another 60 days – which allowed Well Ops to go into the market for its first new monohull in two decades.

Well Enhancer is not simply a bigger, more up-to-date version of *Seawell*. It is seen as a game-changing vessel capable of not just acting as a logging unit, but providing production enhancement and assisting operators with tailend production management. It will also be able to work on category 3 (suspended) wells with the capability to drill out plugs.

Make no mistake, this is a much bigger beast than *Seawell*. At 131m, it is 20m longer with twice the deck space allowing for the installation of a range of test packages that would allow the vessel to handle production fluids flowing back to surface. Although it won't have storage capability, it will be marketed to handle test production with logging capability.

The derrick – a Huismann multi-purpose tower (MPT) with a handling capacity (150t) more than 50% greater than *Seawell* – will be able to employ wireline, slickline and coil-tubing tools. By having a permanent saturation diving spread, it will also allow access to all existing subsea xmas tree stock, which will differentiate it from some of its competitors who only offer diverless operations.

Other increased capabilities include active heave compensation – up from 65t to 150t; subsea lubricator winch – up from 28t to 150t with a capacity of 3000m of wire; and single main cranes of 100t with maximum wire length extended from 400m to 600m. *Well Enhancer* will have a maximum period between calls to port of approximately 60 days.

The vessel will be available in the market by the end of 2008, joining the Helix LWI fleet which includes the semi *Q4000* operating in the Gulf of Mexico. In Australia, the wholly owned business unit Well Ops SEA operates a mobile heave compensated vertical deployment system (VDS), a subsea lubricator system (SID) and a multi-casing abrasive severance package (AXE) from vessels of opportunity. The VDS has recently been deployed from *Seacor Acclaim*, a Helix Canyon vessel, to successfully replace subsea control pods on the Griffin field in Australian waters.

Well Ops management say they have their first commitment for *Well Enhancer* providing 70 days of work in 2009 and in 2010. Like its little sister *Seawell*, *Well Enhancer* will be multi-purpose and will be ready to handle diving and subsea construction opportunities when they come along. OE