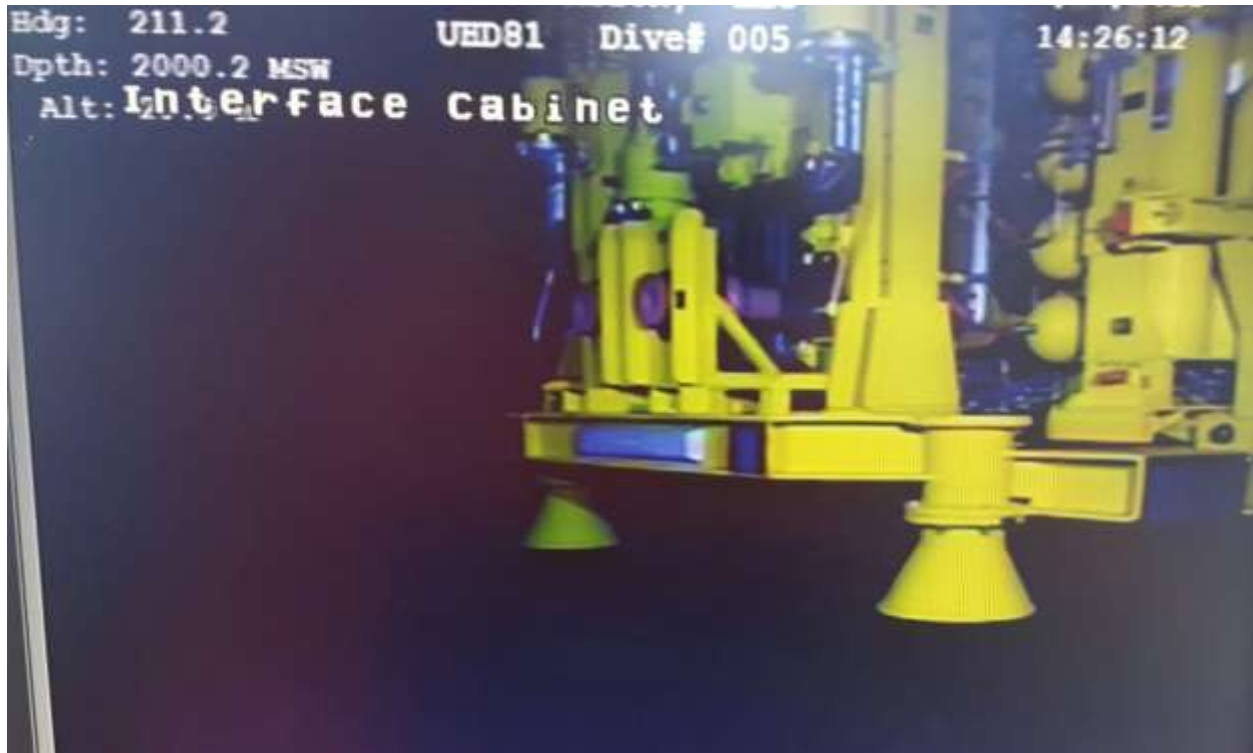


Hydraulic Intervention Subsea by Grant Pierce



As the subsea well lifecycle lengthens there are times when stimulation is required in order to boost production levels.

For subsea wells without a rig on location there are a number of ways to perform stimulation. You can mobilize a LWIV with Hydraulic Intervention kit, for larger jobs a multiple vessel configuration including Stim Vessel and LWIV might be applicable, you could look at a Vessel of Opportunity including Pumping equipment & Hydraulic Intervention kit, and if you have planned ahead and pre-installed connection point on Subsea Manifold it may be as simple as tying into the injection point.

In this short article I would like to outline the stimulation systems and associated equipment currently available. Depending on method of injection being performed and pump rate required there are different options available.

Currently the following systems are available:

Baker Hughes – Fluid Intervention System

Oceaneering – Well Stimulation Tool with Rapid Access Tool (WST/RAT) - <https://www.oceaneering.com/well-intervention/well-stimulation/>

Caltex Oil Tools – Hydraulic Stimulation System

Enpro Subsea (Hunting) – Flow Intervention System (FIS) - https://enpro-subsea.com/Enpro_FIS.html

Subsea Smart Solutions - SSTC Subsea Well Stimulation System - <https://subseasmartsolutions.com/sstc-subsea/>

Trendsetter Engineering – STIM (Subsea Tree Injection Manifold) -
<https://www.trendsetterengineering.com/subsea-hydraulic-intervention/>

TechnipFMC - Subsea Injection Module

OneSubsea – SMIS (Subsea Modular Injection System) with MARS (Multiple Application Reinjection System) - <https://www.onesubsea.slb.com/subsea-services/life-of-field/subsea-modular-injection-system>

Conduits (or downlines) come in a variety of configurations and sizes from standard Coiled Tubing to Thermoplastic Composite Pipe. Typically the pumping contractor will provide these including hydraulic reel.

In addition there is a requirement for Emergency Quick Disconnect (EQD) connectors on your downlines/hardware. If you are familiar with the emergency disconnect for a coflex hose on a stimulation vessel, these subsea connectors are similar in their purpose, allowing disconnect during vessel drift or drive off. There are a range of connectors from passive to active in nature.

So, who offers these connectors and what is available? There are likely more options available from other suppliers though these are the options I am most familiar:

Blue Logic - Auto Release System, Large Bore Hot Stab - <https://www.bluelogic.no/products/fluid-control/auto-release-systems>

Flint Subsea Ltd - Mid Line Weak Link EQD, Well Kill Connector, EQD Skid -
<http://www.flintsubsea.com/default.htm#features1-3i>

SECC Oil & Gas - Hot Make Hot Break Connector, Hot Make Hot Break Gimbal System, Mid Line Weak Link Connector - <http://secc-oilandgas.com/applications/well-intervention/>