

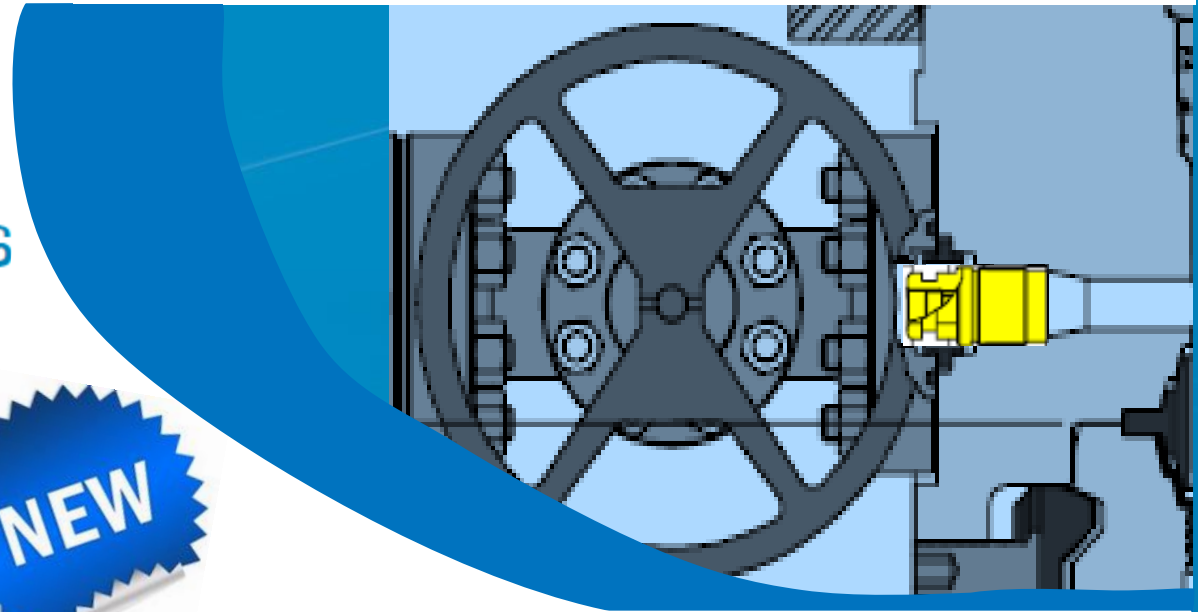


Kinetics Controls  
& Innovation Ltd

[www.kcilttd.co.uk](http://www.kcilttd.co.uk)



## MAC-SEAL - Leak Sealing Solution



*“Successful VR Plug Isolations  
UK Offshore with Mac-Seal”*

# VR Plug Isolations with Mac-Seal 02

Corroded threads on VR Plug



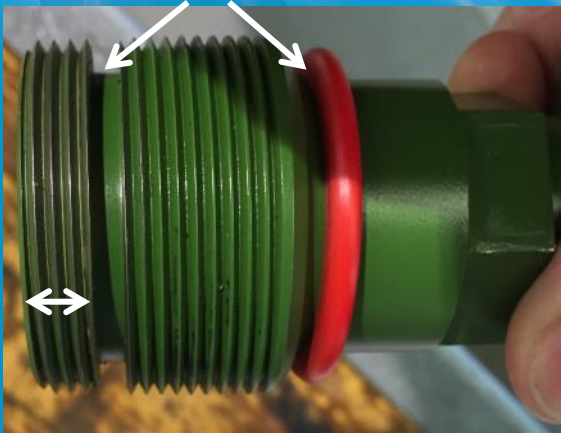
## Background

- ❑ KCI were approached by a major Oil and Gas producer in the UK to provide isolations on several A-Annulus VR Plugs that had failed a leak off test on Gas Lift Wells.
- ❑ The Isolations were required to regain full Well Integrity on the selected wellheads.
- ❑ Corrosion had occurred on the VR Plug threads as seen on a sample recently recovered from a wellhead leading to a loss of integrity – see photo of corroded threads on VR plug.

## Planned Operation

- ❑ The offshore operation followed on from a successful onshore trial where a corroded VR Plug coated with Mac-Seal 02 was installed into a test fixture which was progressively damaged to replicate the offshore leaks reported.
- ❑ A new style VR Plug with a Teflon ring will be used offshore along with Mac-Seal 02 to isolate the leak paths.
- ❑ A final pressure test or leak off test will be carried out to verify the isolation.

Seal ring fits in the groove



Mac-Seal 02 applied in front of seal

# VR Plug Isolations with Mac-Seal 02



Mac-Seal 02 applied to VR Plug



Original VR Plug installed into test piece with Mac-Seal 02

## Actual operation

- ❑ Four wells had their leaking VR Plugs removed and replaced.
- ❑ A new style VR Plug c/w Teflon Seal Ring was used along with Mac-Seal 02 to totally isolate the leak paths.
- ❑ Mac-Seal 02 was mixed and coated on the front four threads of the new style VR Plug then it was installed in the wellhead profile.
- ❑ The Mac-Seal 02 is designed to fill all corroded areas of the threads or any leak paths as the VR Plug is screwed into position and torqued up.
- ❑ The Mac-Seal 02 was allowed to cure then a 3000psi pressure test was applied – Good Test.
- ❑ The wells are planned to be brought on to production after the platform shut down is complete.

\*Example photos taken during successful onshore trial