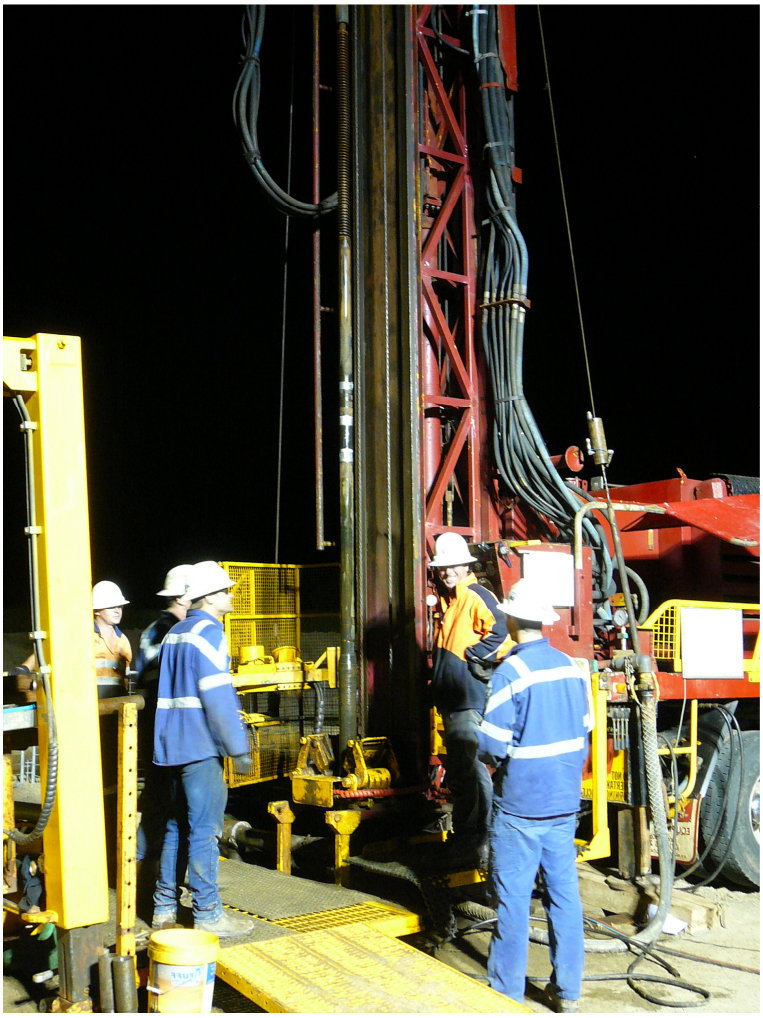
AUSTRALASIAN DRILLING – JAN-FEB 2013
FEATURE SEGMENT
New Technology

Packer Testing on Coiled Tubing

Packer testing is a term often given to permeability testing using inflatable packers to 'pack off' a section of well and conduct a suitable test of that section of the well. It is a key part of Coal Seam Gas (also known as Coal Bed Methane, CSG or CBM], well testing. This is because the permeability, or otherwise, of the coal seam is a key economic factor. Being able to do perm testing on multiple deep coal seams using coiled tubing is an attractive proposition for rapid, efficient testing.

Packer Testing in the Queensland CSG industry is also known as 'Drill Stem Testing' (DSTs) – based on the pre-dominant type of test. However, the more common form of DST tool is from the oilfield sector; cannot run on coiled tubing; and is very unsuitable for running DFITs [Diagnostic Fracture Injection Tests], now the preferred type of test for hard coals that are found at depth in some of the newer CSG developments in northern Queensland. DFIT is a high volume, high pressure form of test that is effectively hydraulic fracturing.

PT Gas Fields Testing Indonesia was probably the first company to use CT enabled packer testing



Packer testing in Queensland is a 24/7 operation—CT could make a difference .

Perth-based Inflatable Packers International (IPI) has a prominent position in the global market for CSG well testing and has introduced its 'ST Formation Tester' which was used on coiled tubing in both Indonesia and Queensland last year. The Indonesian operation was in Kalimantan using a major oilfield service company's 2 3/8 " Coil Tubing (CT) unit running an IPI ST-4 114mm Formation Tester equipped with 140mm packers. The testing was within a 7″ [29ppf] cased well. DFIT testing up to 4,000 psi was carried out – the operator was PT Gas Fields Testing Indonesia, a Jakarta-based well testing specialist. The company's Commissioner (similar to company director in Australia), Phil Rubin, (previously with Arrow Energy in Queensland) said, 'Operating the tool itself was probably the simplest part of the whole exercise – the main challenges on this job were… everything else! It wasn't easy, but we got off twenty successful DFITs. Time to rig up and rig down with coil tubing is about the same, but run-in-hole speeds and pressure rating of the coil tubing are the main benefits. Also, coil tubing eliminates 'rod leakage' if you want to shut in at surface and monitor in real-time. Both these benefits in -crease with depth', he says.

Following close behind in Queensland, Roma based well testing specialist Pro-Test has been using its IPI ST-4 86mm systems with 86mm packers in 96mm HQ wells for over three years. Managing Director Ewan McDonald has many years' experience in open hole DST and established Pro-Test in 2009 as he saw the opportunity to re-write a few rules in how DST testing was done in Queensland. One opportunity was to have more cost-effective tools than the classic oilfield tools and he approached Perth based IPI [Inflatable Packer's International Pty Ltd] to develop their straddle packer systems to be suitable for Queensland operations. Previous IPI tools were not capable of doing the classic form of DST as they are run in with the drill rods full of water, so that they can both inflate the packers and do forms of injection test – ideal for the types of testing required in Africa, India and Indonesia, but not suited for the DST 'build up / inflow' test that requires the rods to be underbalanced.