

## Expro Excellence

# Reducing reservoir uncertainties during field appraisal

## Wireless Well Solutions



### Objectives and background

- The Clair Field is located 75km west of Shetland in water depths of up to 140 meters. It comprises a naturally fractured sandstone reservoir, which over the scale of the Clair Field made reservoir connectivity and compartmentalization risk key uncertainties for field development planning
- The 206/8-13Y Clair Ridge appraisal well was located 8km from the existing Clair production platform and designed to confirm the next stage of development of the field
- An opportunity was identified to instrument the well with a CaTS gauge at the time of final abandonment, thus converting it to a long-term monitoring asset. Observing for interference effects resulting from production or injection events on adjacent assets would demonstrate wide-scale reservoir connectivity

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- A Drill Stem Test (DST) was performed on the well using a permanent packer and tailpipe
- On completion of the final pressure build up, a CaTS gauge was conveyed into the well through-tubing and hung off below a bridge plug set at the bottom of the tail pipe
- The DST string was then recovered to surface and the well permanently abandoned in accordance with the applicable UK regulations
- After installing a CaTS subsea receiver on the seabed, the rig departed the abandoned well location allowing the reservoir pressure and temperature data being transmitted from downhole to be collected at the receiver
- Provides a unique wireless reservoir monitoring solution in a permanently abandoned subsea appraisal well

### Value to the client

- 18 months of high-quality reservoir data was recovered from the permanently abandoned subsea appraisal well at low incremental well cost
- The correlation of the reservoir pressure responses and trends between the Clair phase 1 platform and the Clair Ridge appraisal well provided clear evidence of reservoir connectivity
- Cost effective Advanced Reservoir Testing in an abandoned subsea appraisal well provided high value data to steer the future development planning on Clair

### Technical paper reference

- B.P. Champion, Expro; I.R. Seale, BP; R.K. Pollard, BP, "Clair Field: Reducing Uncertainty in Reservoir Connectivity During Reservoir Appraisal – A First Time Application of a New Wireless Pressure Monitoring Technology in an Abandoned Subsea Appraisal Well", SPE 108435, Offshore Europe, Aberdeen, UK. (September 2007)



**“A unique insight into the pressure across the field, helping to give BP a better understanding of Clair’s complex reservoir and rock formations.”**

Customer

### Insight



### Contact

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