



/ Expro Excellence Meters

Non-intrusive measurement of volumetric flow rate and phase fraction (CGR/WGR) in remote gas wells



Objectives/background:

- The client required measurement on remote wells, where production and flow regime had changed from dry gas to wet gas and their PVT models were outdated
- A mobile, compact solution was preferred due to the remote well site and accessibility to it
- The operator had utilised traditional MPFMs to measure the wells in the past, however was not confident with the results, and didn't trust the existing inline meters
- Existing inline meters were over-reporting gas rates and under-reporting liquid rates

Expro Excellence

- Expro deployed a combination of ActiveSONAR™ and MultiTrace tracer techniques to provide accurate data points, removing uncertainty and allowing for the calibration of existing instrumentation and updating of reservoir models
- Sonar meter deployed at wellhead to measure wellstream velocity
- MultiTrace was deployed at the wellhead to measure the liquid ratios of the wellstream
- Both services are non-intrusive and were deployed without requiring to break containment or shut-in the wellstream

Value to client

- The client's initial estimate of the liquid ratio was 10bbls/MMscf, however the tracer provided a LGR repeatable result of 2bbls/MMscf, with no water present
- Technique used to correct gas rates and determine liquid content, allowing the client to update PVT and calibrate existing inline metering for ongoing surveillance and production optimisation
- Non-intrusive technology to minimise cost with no production losses

Sonar surveillance of oil and gas wells is a proven accurate and cost-effective solution for daily production monitoring where conditions are stable and liquid rates are known (or predictable). This can be used as an alternative to the mobilisation of test separators, deferring production or accessing remote well pads. In cases where the fluid composition is unknown, accurate multiphase measurement can be achieved through the combination of sonar surveillance and MultiTrace technology, which provides a spot measurement of CGR and WGR in high GVF wells.

CGR – condensate/gas ratio
LGR – liquid/gas ratio
MPFM – multiphase flow meter
PVT – pressure/volume/temperature
WGR – water/gas ratio

Contact

For further information, please visit:

www.exprogroup.com/meters

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