



EXPRO

WELL FLOW MANAGEMENT™

/ Expro Excellence

Wireless Well Solutions

CaTS™ retrofit wireless gauge technology provides real time production optimisation in a Middle Eastern gas condensate reservoir



Objectives

- A Middle Eastern operator is producing a gas/condensate reservoir – it is critically important to manage the reservoir pressure to stay above the dewpoint to avoid liquid hydrocarbons dropping out in the near wellbore region (so called “condensate banking”, which can negatively impact well productivity)
- The operator has a programme of gas reinjection ongoing to maintain the reservoir pressure above the dewpoint and prevent the onset of condensate banking
- The wells did not have any form of permanent gauge systems installed and whilst memory gauges were considered, these only provide data historically thus real time reservoir optimisation would not be possible
- A retrofittable wireless gauge system that can deliver continuous real time reservoir monitoring was considered very attractive in allowing the reservoir to be managed effectively

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- Expro CaTS wireless gauge technology was retrofitted into the well on slickline and hung off in a standard nipple profile

- Bottom hole flowing and shut-in pressures were measured using a precision, high-resolution, quartz pressure sensor and the data then transmitted to the surface wirelessly using the steel of the well completion as a conduit for the CaTS signal to pass along
- At the surface, a CaTS receiver collected, decoded and stored the data to local memory
- By interfacing the CaTS receiver to the operator’s data network it was possible to deliver high quality, high resolution pressure and temperature data-to-desk in real time

Value to client

- First time use of this technology for the operator
- Successfully transmitted bottomhole pressure and temperature data to the client’s desk in real time
- Data-to-desk allowed rapid decisions to be taken in terms of managing the drawdown and gas reinjection operation, thus enabling the reservoir performance to be optimised
- Production of the reservoir managed more effectively and options are now being considered for wider technology adoption across the field

Expro’s CaTS wireless communications technology transmits data and control commands using electromagnetic (EM) communications. The EM signal uses the steel construction of the well, namely casing, liner or tubing, as a signal conduit.

In wells where the permanent gauge system has failed, or where no monitoring system was ever installed, the CaTS gauge can be retrofitted into the well on slickline and transmits real time pressure and temperature data to surface. The topside receiver can be easily interfaced with the client’s internal data network to deliver data-to-desk in real time. The system is addressable with up to 20 discrete zones being monitored in a single well.

I am impressed with this technology; the gauge resolution is very good. ”

Operator focal point for the trial

Contact

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