

Expro Excellence

CaTS™ Gauges provide early indication of condensate banking

Wireless Well Solutions



Customer challenges

- A Middle Eastern operator is producing a gas/condensate reservoir
- To optimise and maintain production of the gas condensate, the necessary reservoir pressure support is provided by a system of injector wells that re-injects recycled sour gas residue from the exported condensate
- 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 earliest opportunity to detect condensate banking is typically from downhole pressure surveillance, however the wells did not have any form of permanent gauge systems installed
- Memory gauges were considered but these only provide data historically thus real time reservoir optimisation would not be possible
- A retrofitable 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 was then transmitted to the surface wirelessly using the steel of the well completion as a conduit for the CaTS signal to transmit 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 the client

- The CaTS Gauge successfully transmitted bottom hole pressure and temperature data to the client’s desk in real-time
- By installing the CaTS Gauge for long term monitoring the client reduced intervention costs and operational risks associated with the deployment of short-term memory gauges
- The customer did not need to perform a well workover to achieve real-time downhole monitoring in their production well
- Data-to-desk allowed rapid and dynamic decisions to be made for managing the drawdown and gas reinjection operations, and optimisation of the reservoir pressure support system
- This ultimately allowed the operator to determine a sufficient operational envelope and avoid the risks of condensate banking



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

Operator focal point for the trial

Insight



Contact

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