

SONAR Flow Meter for Water Injection

Water injection for pressure support

Summary

Expro's non-intrusive SONAR meters are ideally suited for Water Injection application to improve data quality.



Background

Our client, along with an Arabic oil company, is working with close cooperation to develop and operate offshore fields in the Middle East. The partnership has embarked on the Field Development Plan phase. In this phase specific activities were identified from upgraded reservoir simulation models to implement and/or improve water-flooding practices in all oil producing reservoirs.

A key component of the current and future Field Development Plan (FDP) is the use of water injection for pressure support. To optimize enhanced recovery, it is essential to couple reservoir simulation models and nodal analysis with actual measured data. To this end, our client has attempted to meter water injection rates and to use that data in its nodal analysis. Accurate measurement of water injection rates is crucial.

Customer challenge

The client had previously installed traditional ultrasonic flow meters on the pump discharge and on the smaller injection lines. Total flow rates reported by the ultrasonic flow meters for the individual injection lines could not be reconciled with the measured or computed discharge from the pumps. The discrepancies caused problems with reservoir simulation models.



Expro's solution

SONAR meters were deployed on the pump discharge line and on all of the individual injection lines and measured the flow rates. The data reported by the SONAR meters was used to reconcile the pumped and injection rates and to diagnose discrepancies in the ultrasonic flow meters readings. Ultimately, with the more accurate surveillance of pump output and injection rates, the pressure support strategy was improved in the field.

Key deliverables

- Non-intrusive design
- Real time measurement
- No process shut down
- No modification of the surface lines
- Cost effective
- Accurate

Technology Used

- ActiveSONAR™ flow meter
- Well Test Studio™

Contact Information
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