

Emerson Coriolis Solution in Kuwait Oil Company

RESULTS

- Decreasing well testing cost by \$876,851 per year per Gathering Centre
- Reliable multi-phase metering well testing system replacing portable conventional systems
- Real-time data on the Gas Oil Ratio from each well optimizing production and decision making



APPLICATION

Well test metering system to determine the watercut of each well as well as the GOR and well characteristics.

CUSTOMER

Kuwait Oil Company; Located in South and East Kuwait, Kuwait

CHALLENGE

To increase the frequency of the well testing (to achieve the target of 4 well tests / string per year) and to decrease the budget for portable testing to replace old system with latest accurate, user friendly & cost-effective system. A new system to act as a reliable alternative for portable well test metering and ensure availability of spares, vendor support for maintenance providing ease in trouble shooting & maintenance of the system.

SOLUTION

Emerson approached KOC with a solution of using its Multiphase Well Test Metering System to replace the existing system with one that comprises using Micro Motion Sensors on the liquid as well as the high and low pressure gas legs, a ROC flow Computer with DNOC s/w License (Digital Net Oil Computer) and a Danpac Express user interface to accommodate the wells. In this solution the Micro Motion sensors directly feed into the ROC/DNOC along with the pressure and temperature (for information purposes only). Micro Motion® Net Oil Computer Software, with Micro Motion Coriolis sensors and the ROC809 Remote operations Controller, performs simultaneous measurement of net oil, free water, total water, and gas.

“As a long-time technology partner, Emerson offered their solution to solve our core operational issue of well test metering. We are more than satisfied with the results.”

Hamed A. Al-Mutairi
Manager Operation (KOC East Kuwait)

DanPac Express provides the user interface to allow the operator to store, visualize, control and summarize the well on test.

The following features were provided through the DanPac Express interface:

- Setup well test parameters
- Add/Delete/Edit wells
- Meter diagnostic summary
- Well characteristic database
- Well test report
- Net Oil Computer flow calculation report
- Gas Oil Ratio



Business Results:

- 35 Wells were tested over a 7 week period
- Wells were both high and low pressure
- Results achieved were well within the specified accuracies stated in the success criteria
- Trial was concluded a success
- Replacement / upgrade of the remaining 13 GC's is underway

Benefits and Cost Savings:

- Total cost for implementing pilot project = US \$ 98,214
- Break-even per GC can be achieved with 10 tests – currently they are running tests continuously

With such results KOC is now carrying out continual testing on all of its wells and is currently in process of upgrading the remaining 14 Gathering Centres.