



INCREASED ACCURACY IN WET GAS APPLICATION WITH MICRO MOTION F-SERIES METERS



Micro Motion F-Series meters installed in well site gas allocation

RESULTS

Immediate 50% improvement in measurement accuracy

Saved up to \$1500/year in calibration and maintenance costs

Significantly increased turndown to 60:1



Application

Allocation measurement for wet gas off heater-treaters with improvement in accuracy and reduction in OPEX.



Challenge

A large multi-national oil producer with significant assets in the Bakken has experienced significant challenges in attempting to measure wet gas off a heater-treater with traditional dP technology. The high liquid content regularly resulted in flooded meter runs, blocked dP taps and large variances in measured gas production over the life of a well. This required constant monitoring and maintenance during operation resulting in significant operating expenses and measurement uncertainty.

Additional labor was required to monitor existing technology to ensure proper operation wells deplete and see significant reduction in production rates and pressures over even a few months. This adds cost and complexity to gas measurement, requiring technician intervention.

Government regulations require quarterly verification of meter calibration. Existing dP technologies require a trained technician to calibrate the meter at various pressures and remove the orifice plate for visual inspection. This requires shutting in the well, leading to lost production and an increased chance of well fouling.



Solution

The company chose to replace the orifice plate system with a Micro Motion F200 meter with Smart Meter Verification (SMV) and Transient Mist Remediation (TMR). This solution allows for a significant increase of flow range as well as increased accuracy even with the presence of liquid in the gas.

Smart Meter Verification has been accepted by the AGI and NDIC as an approved method for verifying calibration. This is done in-situ and does not require a trained technician to perform it, and

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additionally, eliminates any need to shut-in a well or remove any parts from service for inspection.

Transient Mist Remediation (TMR) is a specialized algorithm that allows the customer to automatically remediate the gas totals to eliminate liquids from the total. This eliminates the need of doing monthly remediation and provides real-time data on the actual gas totals and the amount of liquid carried by the gas.



Results

The solution has proven to be very robust with zero technician interaction for the last 6 months. The automatically scheduled SMV testing allows the producer to collect verification results for regulatory compliance without the need for technician intervention or potential loss of production due to shut-in.

This Micro Motion solution implementation has allowed the producer to reallocate their existing resources to solve other issues within their facilities.



F200 meters in wet gas application for both high and low pressure lines off a heater-treater

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