

Well Testing Case History

# Offshore Dual Inline Heaters in Series

## Challenge

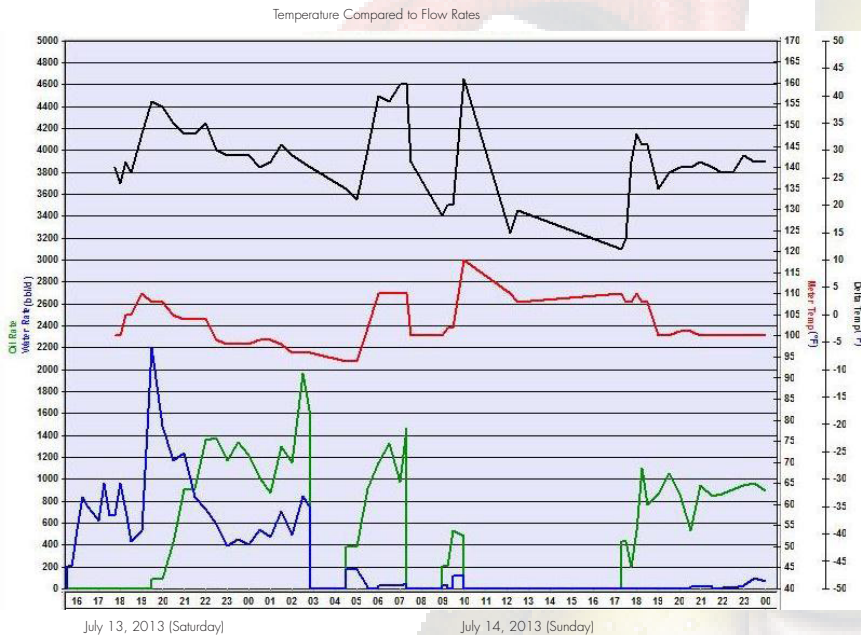
A Gulf of Mexico operator sought a small footprint and cost-effective well test package from CETCO Energy Services with a gas/oil ratio of 1,000 bbl/scf, surface temperatures of approximately 60°F, total vertical depth of 11,000 ft, a water depth of 2,500 ft, and a water weight of 9.6 ppg. CETCO considered options of process heating methods as a means to reduce the footprint on the rig and operational costs.

## CETCO Solution

With a target separator temperature of more than 80°F in order to break effluent emulsions and foam, CETCO reviewed two possible heating methods: dual inline heaters in series and a steam exchanger package. The steam exchanger package offered greater heating capacity with a greater footprint and cost, therefore, after evaluating estimated heat duties of the process, the dual inline heaters in series were selected and provided by CETCO.

## Outcome

CETCO maintained bath temperature between 140 - 150°F while separator temperatures were maintained between 95 - 115°F over all flow periods. The empirical data gathered on location confirmed that the dual inline heaters in series are an acceptable heating method given the well parameters and test objectives.



(Figure 1: Delta Temp compared oil and water rate)