Red Eye Subsea Water-Cut Meter

Reduces Chemical Injection Requirements
Saves $2 Million Annual Recycling/Transport OPEX

Objectives

- A joint venture between an international oil company and a local operator in Egypt sought to manage the hydrate-injection process for an offshore wet-gas well with a dry-gas flow regime that included a GVF (gas-volume fraction) of 99.9 percent. The onshore hydrate-processing facility was approximately 136 miles (220 km) from the offshore wells located at a depth of 4,921 ft (1,500 m). Hydrate formation mitigation along with water breakthrough monitoring was required for this flow-assurance data. In the production phase, the well's production volumes are directly tied to the operator revenue, so assuring constant flow of hydrocarbons was critical. The risk of hydrates blocking the production lines and compromising the integrity of systems, pipelines, and risers increased in the cold and pressurized deep subsea environment—further compounded by long pipeline tiebacks. This information was being derived through hydrate stability-curve models utilizing PVT data and salinity estimates. However, it was not accurate to truly mitigate hydrate formation should it occur.

Our Approach

- Following a thorough review of the operator's needs and well environments, the Weatherford flow-measurement team recommended Red Eye subsea water-cut meter—the world's only subsea water-cut meter allowing for real-time measurement of water and hydrate-inhibitor fractions for inhibitor-injection rates. The Red Eye water-cut meter enabled the operator to reduce OPEX by validating the models through real-time measurements and providing the confidence to reduce MEG-injection rates. Using the continuous data from the Red Eye subsea meters, the operator was able to reduce the MEG-injection rate by a ratio of 15:1, which translates to a 90% reduction in MEG recycling and transportation costs, from start-up to steady state production.

Value to Customer

- The real-time, water-hydrate inhibitor ratio and inferred water rates enabled the operator to confidently manage hydrate-injection rates to optimal levels. This reliable source of water-cut data significantly reduced chemical-injection rates by 15:1, saving more than $2 million annually in OPEX.

The Weatherford Red Eye subsea water-cut meter provides real-time inhibitor injection optimization and control at the wellhead. With real-time control, this Egyptian offshore operator was able to reduce chemical-injection rates 15:1–saves 90% annual recycling/transport OPEX costs of $2 million.

LOCATION/FIELD
Offshore Egypt/Deepwater Mediterranean

WELL TYPE
Wet Gas

WELLBORE DEPTH
4,921 ft (1,500 m)

PRODUCTS/SERVICES

- Red Eye Subsea Water-Cut Meter
- Flow Measurement

Weatherford®

 13583.00