

# SEASTREAM<sup>™</sup>

## Seastream - SPFM Chemical Injection Metering

### APPLICATION

In subsea gas production, chemicals such as Methanol or Glycol (MEG) are injected within the gas production stream to prevent hydrates. Hydrates are a crystalline structure which can block production lines when operating at low pressure and temperature when water is present in hydrocarbon gas. This is typically referred to as operating within the hydrate curve. Injecting chemicals can lower the temperature at which hydrates form. When normal production occurs above the hydrate curve, chemical injection may still be a requirement during well start-up or shut-in.

On Subsea gas wells, injection chemicals (although often a necessity) can significantly increase OPEX. Reservoir Engineers to accurately measure injection rates to:

- Prevent hydrate formation and potential loss of production
- Optimize chemical usage and control operational costs

### CHALLENGE

Chemical injection is essential for managing production of many subsea gas wells, preventing hydrates and controlling operational costs.

How does the reservoir engineer receive accurate injection flow rate data when:

- Subsea real estate is at a premium
- Injection rates can change dramatically over the life of the field



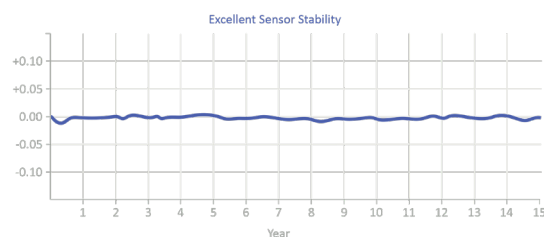
### SOLUTION

Seastream meters, designed by our flow metering specialists, offer high accuracy and reliable injection data, even in the harshest of subsea environments. Our flow meters, supported by the ISO 5167 international flow measurement standard, are recognized as a robust 'Fit and Forget' flow metering solution.

### SEASTREAM

The LoFlo Seastream Flowmeter has been specifically developed to accurately monitor low injection rates and measure a wide turndown range. Fully digital sensors and unique FloCalculator software are integrated as standard, ensuring long term stability of measurements and ease of integration into subsea control systems.

Deploy our LoFlo Seastream to play a key role in efficient well management and improve chemical injection data on gas wells.



- Wide turndown- operates during 'hydrate flood' and normal operational rates
- Typical operating range 0.5 to 2 Am<sup>3</sup>/hr
- Increased range for start up to 4 Am<sup>3</sup>/hr
- Assured measurement – unique flow rate output
- Reservoir optimization tool