

# SONAR flow meter for well intervention services

## Well intervention services

### Summary

Expro's SONAR meters are used as part of an integrated well intervention strategy including:



- **Pre-intervention:** Measure base-line production rates, prioritize and select intervention options
- **During intervention:** Collect real-time production rates and optimize well site operations
- **Post-intervention:** Measure of production rates in order to quantify and validate the success of the intervention procedure

### Background

Well intervention offers the potential to improve and/or extend the production profile of a well in production. Typically, well intervention operations target an aging well population to improve the well economics. Where the cost/benefit of well intervention proves more compelling than new drilling, it can be an effective strategy to extend the life of the field.

### Field challenge

Generally, well intervention is defined as any process that enhances or improves production from the well. These operations range from simple data surveys through



complex isolation and perforation operations. There is a range of mature and developing products and services to help Reservoir and Petroleum Engineers improve production or extend the life of their wells.

The primary consideration is safety when intervening on a live well. The second consideration is the cost/benefit, managing

### Key deliverables

- Non-intrusive design
- Real time measurement
- No process shut down
- No modification of the surface flow lines
- Cost effective
- Accurate

### Technology Used

- SonarTest™ service
- ActiveSONAR™ flow meter
- PassiveSONAR™ flow meter
- Well Test Studio™

### Contact Information

[Exprometers.com/contact](http://Exprometers.com/contact)  
or call +1 203-303-5686



and minimizing costs of the intervention program through an intensive planning cycle. Decisions on intervention programs are often made with limited and outdated production data.

### Expro's solution

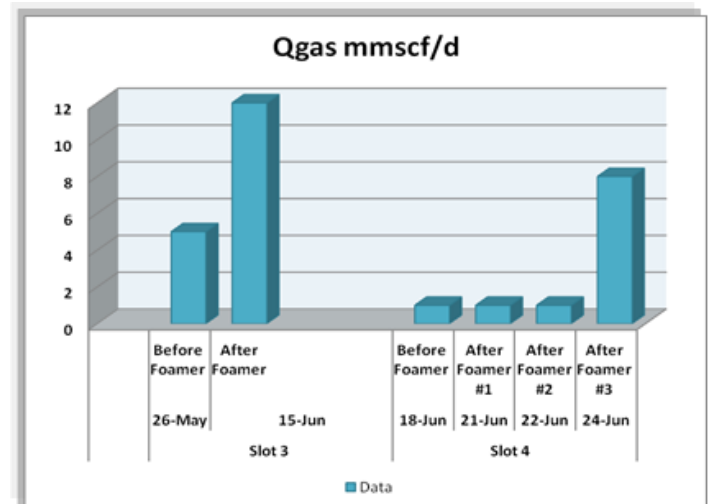
Expro Meters offers Reservoir and Petroleum Engineers access to cost effective individual well surveillance. Clamp-on and non-intrusive, our SONAR meter requires no modification of the surface flow lines.

This access to individual well production data offers the wells team the opportunity to evaluate individual well performance and feed this preliminary data into the intervention planning process. For example, it would be known that total field production is down and water production up, however, knowledge of individual well production is often unknown.

Knowledge of individual well production rates allows the operating company to avoid the unexpected, and develop targeted intervention campaigns for each well. This helps to minimize the number of intervention operations, reducing costs for equipment and personnel mobilized to the well site, and ultimately bringing the well back on production earlier.

SONAR Meters have been successfully deployed in intervention campaigns employing the following intervention techniques:

- Water wash halite removal
- Batch foam treatment
- Coiled tubing nitrogen lift gas well deliquification
- Tubing plug zonal isolation
- Cement squeeze zonal isolation



For intervention campaigns, SONAR meters are typically deployed using Expro's *Sonar Test*™ service, which includes a small footprint kit of meters and all ancillary equipment. Expro Meters field technicians are deployed to install meters, take data, report preliminary rates at the well site and produce a full well test report at the end of the job.

### Result

Expro's SONAR Meters have successfully diagnosed falling production associated with:

- ESP failure
- Storm choke failure
- Halite build up
- Liquification of gas wells
- Packer failure, cross flow between zones

