

## FIBRE-OPTIC WELL SURVEYS

FAST - SMALL - DISPOSABLE - DATA RICH

FiberLine Intervention (FLI) is a low-risk wellbore surveying solution, which rapidly delivers high quality insights. It is often employed in surveys where other options prove unsuitable due to well accessibility, location, cost, application challenges, the likely level of data provision or speed of response.

FLI has been commercially deployed both onshore and offshore around the world, with a strong track record of success and operational benefits.

FLI uses fibre-optic technology to capture distributed temperature and acoustic profiles along the length of the well in real time. It provides key measurements, pinpoints areas of interest and monitors changing conditions, irregularities, anomalies or events in a single well or set of wells simultaneously.

Intervention cost and run-times are dramatically reduced compared to other forms of well surveillance. Surveys can be completed in just a few hours, requiring only one person at the wellsite. The equipment is hand-portable, compact and lightweight with a tiny wellsite footprint. The FLI probe and fibre are single-use and sacrificial so can be left in the well at the end of the survey.



### WHAT IS FLI?

**Probe.** A single-use, weighted probe is launched from a pressure containing package at the wellhead and free-falls into the well.

**Sensors.** One or more bare optical fibres, acting as distributed sensors, unspool from the probe as it falls. Additional electronic sensors can also be included in the probe.

**Data.** A surface acquisition system immediately records and processes the data gathered by the sensors.

### WHAT MAKES FLI SPECIAL?

**Speed.** FLI is a standalone intervention system and takes only a few hours to complete a project, from rig-up to rig-down, which translates into substantial savings.

**Tiny footprint.** FLI uses very little space & few services at the wellsite.

**Data rich.** Fibre-optics are highly sensitive and provide quality data. Speed and simplicity do not come at the expense of capability.

## FLI BENEFITS

- Stand-alone intervention system and service.
- Field proven both onshore and offshore.
- Provides answers where other solutions can't.
- Suitable for inaccessible wellheads, unmanned platforms, marginal wells.
- Access to vertical, deviated and horizontal wells.
- Fast to deploy & to deliver results - greater efficiency & less downtime.
- High quality, super-rich data sets.
- Offline activity enabled.
- Practical, multi-well surveillance programs.
- Superior depth measurement and control.
- Provision of calibrated production models.
- Enables increased efficiency of future well operations.
- Lightweight, compact and portable.
- One operative - reduced mobilisation and POB.
- Reduced risk, logistics, deck space and carbon footprint.
- Impressive cost savings.

## TRACK RECORD OF SUCCESS

- FLI is suitable for offshore and onshore projects and has been deployed in over 100 wells around the world, from Europe to North and South America, the Middle East, Asia and Australia.
- Clients include independent, major and super-major operators, plus tier 1 integrated service companies.
- We've had zero HSE incidents.
- We promise cost savings, fast mobilisation, a small on-site footprint, minimal POB, reduced risk, remote support and rapid results.
- On average FLI delivers a 40-70% cost saving for individual surveys. An extra 50% saving can be realised when batch surveying four wells or more.
- By quickly providing reliable insights, FLI informs engineering decisions and the planning process for ongoing operations, remediation, rig time or multi-well campaigns.



## VALUABLE FIELD APPLICATIONS

FLI is a powerful, distributed, temperature and acoustic surveying solution. It is also a dynamic system, in which the probe and fibre can capture measurements during descent into the well, either under the influence of gravity or by being pumped down. FLI is an effective alternative to acoustic and temperature logs, retrievable fibre optic cable, geophones and echometers.

### Valuable field applications include:

- **Static bottom hole pressure surveys** - Production optimisation, enhanced recovery planning, P&A planning.
- **Leak detection** - tubing leak location, late life well integrity, P&A planning & well remediation.
- **Injection Profiling** - liquid and gas flow allocation surveys, production optimisation and well remediation.
- **Cement cure evaluation** - Well completion operations, assisting legislative cement verification, well remediation.
- **Vertical Seismic Profiling** - Subsurface profiling, reservoir analysis and engineering.
- **Offset Well Frac Monitoring** - Analysis of cross-well strain and optimisation of fracturing operations.

