Equipment for round-trip operations
Mobile explorative devices
Inspection and calibration stands for research tools
Software
Well Testing Devices

Permanent Downhole Gauge System – SPSK
Permanent Downhole Gauge System SPSK

Successful field development thanks to the obtaining of quick and reliable information and the minimizing of losses during exploration

Tasks

Permanent downhole gauge system (SPSK) intended for a continuous downhole monitoring and designed for obtaining highly accurate real-time information on the bottom-hole pressure and temperature.

Operating advantages

SPSK is based on one or several high-precision quartz or silicon-on-sapphire sensors installed in the borehole and passing the pressure and temperature measurement data via a separate cable to an overground field control unit in a real-time mode.

- Getting quick and reliable information necessary for successful field development:
  - Choice of the optimal operation mode of a well
  - Maintaining the optimal operation mode of a well
  - Evaluation of the potential of a well and the condition of a deposit
  - Planning and control over the performance of geological and engineering operations
  - Control over the coning of the bottom water
  - Control over the formation of hydrates
  - Adjustment of the gas-dynamic field model

- Minimization of losses in natural gas production during exploration thanks to the following advantages:
  - Possibility of tracing and analysing the pressure transient test in real-time mode
  - Application of modern methods of analysis of the pressure transient test (deconvolution)
  - Use the information collected during the time of operational shutdown of a well

Specifications

(for SPSK, based on a quartz sensor)

- Temperature channel specifications:
  - Nominal range: 0-150 °C
  - Accuracy: 0.2 °C
  - Resolution: <0.01 °C
  - Drifting: <0.1 °C/year

- Pressure channel specifications:
  - Nominal range: 0-700 atm
  - Accuracy: ~0.1 atm
  - Resolution: ~4.2*10⁻⁴ atm
  - Drifting (at Pmax and Tmax): <0.07 atm/year

1 – Surface module
2 – Surface cable
3 – Certified cable entry
4 – Cable (high-protected)
5 – Cable protectors (on each joint)
6 – Gauge in special casing
7 – Pump or open-end tubing

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