Well Flow Management

Fluids Sampling and Analysis

20K Tubing Conveyed Sampling

The combination of downhole sampling carriers and Expro Petrotech's 20 K PCS samplers provide a powerful sampling tool for undersaturated gas condensate wells.

The single-phase fluid sampler carrier is for running on standard drillstem tests (DST), shoot and pulls, or anytime a tubing-conveyed fluid sampling system is required. The 25K nitrogen pressure compensation system on the PCS single phase samplers keeps the sample in monophasic condition from the reservoir to the surface. The tool can also be run on slickline, electric-line or coiled tubing.

The PCS provides service in the most hostile well environments, even with extreme H_2S levels. A slow positive displacement of the floating piston ensures no pressure differential across the sample entry ports.

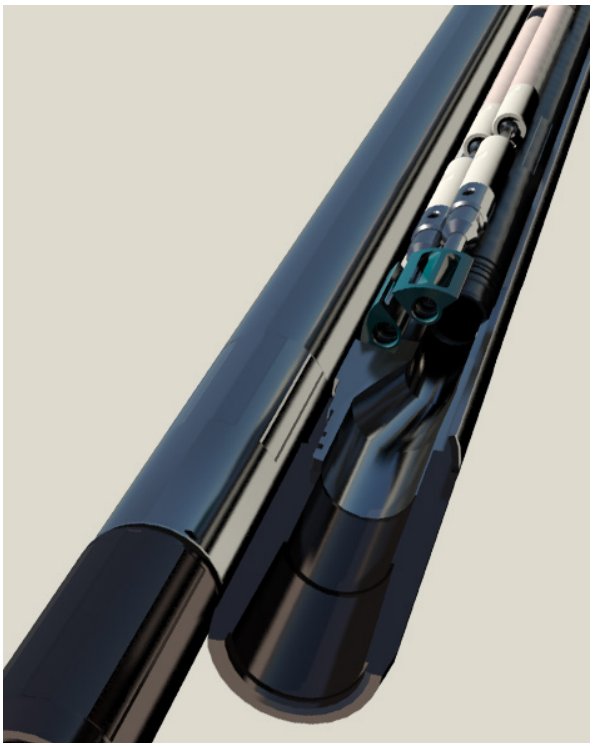
The non-reactive material makes the tool excellent for trace element sampling and sampling in highly corrosive hydrocarbon fluids containing CO2, H_2S and brines. The material of the tool provides insignificant loss of H_2S from the sample. Unlike conventional bottom hole samplers the PCS will maintain the sample in single-phase from bottom hole to surface. With no requirement for re-establishing single-phase at surface, sample transfer is performed rapidly and without jeopardising the integrity of the sample. Single-phase reservoir sampling has widely been accepted as the industry standard for reservoir PVT sampling. By keeping the sample in singlephase, errors during reconditioning of the sample are avoided.

High pressures of the N2 charge are essential in order to secure single phase at surface. The high pressure rating of the PCS tool is sufficient to achieve this for all reservoir conditions and reservoir fluids.

Single-Phase Fluid Sampler Carrier Tcs

The main objective on any DST is to gather data, including reservoir fluid data. TCS downhole sampling systems provide a cost-effective solution for drillstem tests where running wire may be an issue, including deep water, horizontal, HPHT, and H_2S applications.

Not only does this result in a safer rig operation, but since wireline sampling runs can now be eliminated, it can translate into substantial cost savings. Other applications can include shoot and pull jobs where data acquisition is often compromised for the sake of speed. By including a pipe-conveyed sampler carriers in the shoot and pull string, downhole fluid samples can be easily obtained without complicating the test string design, and without running wireline. Pipe-conveyed sampling systems also play an important role in the new generation of reduced emission testing.



Features and benefits

- Sampling verification with the Acoustic Telemetry System (ATS™) reduces sample contamination
- Full flow 2.25" ID for wireline applications
- Multiple firing devices interchangeable to achieve acoustic, annular pressure, pressure pulse, mechanical and wireline-fired systems
- 10,000 psi differential pressure rating
- Mercury free sampling
- H_2S service
- Eliminates the high cost and safety issues associated with wireline sampling to obtain single phase sample