

Sand-Vac, Well-Vac, Tele-Vac well cleanout systems

Remove solids and liquids from ultralow-pressure wellbores

Remove solids and liquids

The Baker Hughes **Sand-Vac, Well-Vac, and Tele-Vac™ solutions** use concentric coiled tubing (CCT) combined with a proprietary downhole switchable jet pump to remove solids and liquids from ultralow-pressure wellbores that are not treatable with standard circulating methods. These cleanout systems isolate the fluids from the reservoir and allow continuous returns without the use of nitrogen. This is particularly advantageous for cleanout operations that require significant amounts of nitrogen or have issues related to supply, logistics, or platform deck space.

Used in extended-length producing intervals, these systems handle crossflow or thief-zone challenges that hamper conventional circulation cleanouts. The tools also incorporate optional built-in pressure and temperature memory gauges to collect accurate downhole data.

The cleanout systems use CCT combined with a proprietary downhole switchable jet pump to remove solids and liquids. Liquid pumped down the inner coiled tubing string through the jet pump nozzle creates a localized pressure drop that essentially vacuums wellbore fluids and entrained solids.

Meet objectives in a single run

While deployed in the well, the system can be switched between multiple operating modes to achieve all of your objectives in a single run.

The Sand-Vac system uses CCT combined with a proprietary downhole switchable jet pump to remove solids and liquids from ultralow pressure wellbores that are not treatable with standard circulating methods – without the use of nitrogen.

The Well-Vac mode increases the localized pressure drawdown to vacuum wellbore fluids, drilling mud, stimulation fluids, and other liquids from the reservoir. In Sand-Vac and Well-Vac mode the combined return flow enters the jet pump diffuser and recovers pressure from the nozzle to drive the return fluids to the surface via the CCT annulus. This system uses a single-phase fluid that enables the cleanout to be performed with simplified logistics and reduced costs when compared with circulating nitrified fluids.

A final tool mode of high-pressure jetting, diverts all circulated flow through high-pressure nozzles to break and loosen consolidated sand bridges or it is used to place stimulation fluids.

Applications

- Ultra-low-pressure reservoirs
- Well cleanup and unloading
- Production profiling
- Heavy-oil and sand-producing wells
- Operating areas that are constrained in the use of nitrogen due to costs and logistics

Benefits

- Saves time and trips through multiple operating modes
- Removes sand and solids in a single run
- Vacuums drilling mud, stimulation fluids, and other reservoir fluids and enables production inflow profiling
- Passes through hard sand bridges and enables effective stimulation fluids placement
- Optimizes time on location by providing accurate job design, simulation, tool setup, and safe operating guidelines
- Eliminates the need for nitrogen, reducing logistical issues and reducing costs
- Offers simultaneous logging operations when used with TeleVac solution
- Extends access to multilateral wells when used with LEGS tool

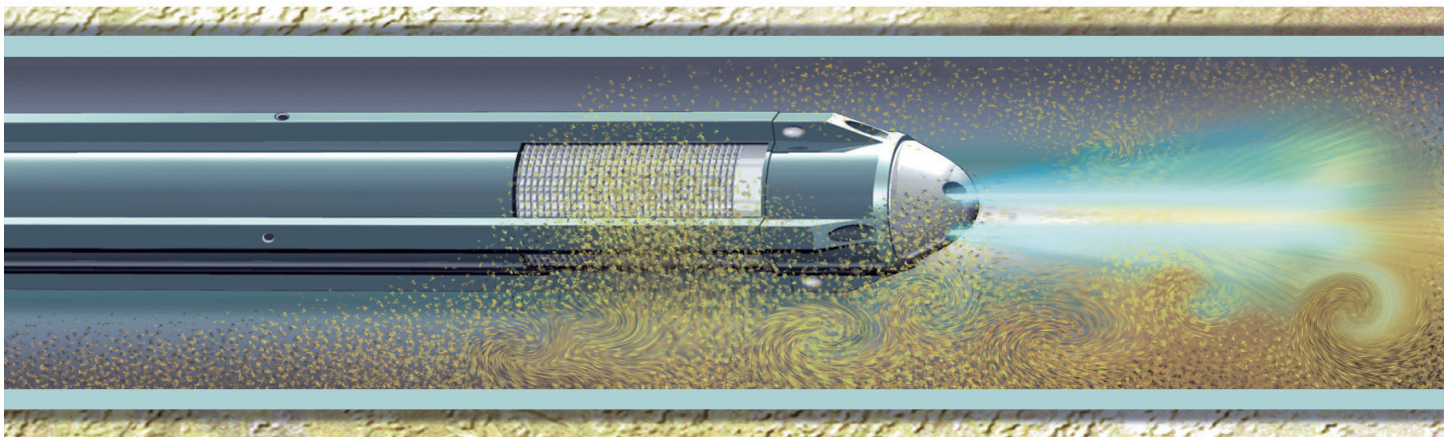
In high-pressure jetting mode no flow is routed to the jet-pump and no returns are taken to surface.

For enhanced operations the system is compatible with both the **LEGS™ lateral entry guidance system** to access multi-lateral wells and the TeleVac logging solution. The Tele-Vac solution incorporates a TeleCoil cable in the CCT string routed to a Tele-Adapter logging tool positioned below the Well-Vac tool. This permits logging operations with localized drawdown encouraging even flow distribution while saving operational time.

For more information on cleanout options for your ultralow-pressure wellbores, contact your Baker Hughes representative.

Typical properties

Tool OD		Tool length		Temperature rating		Typical CCT size	
in.	mm	in.	mm	°F	°C	in.	mm
1¾	44.5	62	1,600	390	199	1½ x 7⁄8	38.1 x 22.2
2¾	54.0	91	2,300	390	199	2 x 1 or 2¾ x 1¼	50.8 x 25.4 or 60.3 x 31.8
2½	63.5	91	2,300	390	199	2 x 1 or 2¾ x 1¼	50.8 x 25.4 or 60.3 x 31.8



Forward- and rear-facing jets fluidize solids, which are sucked through a screen section and sent to the surface via the CCT annulus.