



Get more versatile, quicker, and safer sand control

GeoFORM Flex conformable sand management system

Just like our existing GeoFORM system, the GeoFORM™ Flex conformable sand management system offers a quick, safe alternative to conventional sand control while allowing seamless integration with Baker Hughes proven technologies, such as the Multitasking Valve (MTV) and Equalizer™ Lift autonomous inflow control device. This upgrade to the patented GeoFORM conformable sand management system provides performance similar to or even better than that of an optimal gravel pack. The system eliminates the need for a washpipe to pump activation fluid while providing enhanced oil recovery with Equalizer technology. Using advanced materials science, customers can achieve total conformance and superior filtration—on every job to improve long-term production while reducing operational requirements and health, safety, and environmental (HSE) risks.

MORE VERSATILE

The system seamlessly integrates with various sand control accessories for maximum versatility. The GeoFORM system offers superior modular adaptability, and can be configured with:

- Multi-tasking valves (MTVs) to eliminate washpipe

- Inflow control devices (ICDs) for enhanced oil recovery
- Sliding sleeves for shutting off unwanted zones of production in the future
- Tracers to provide critical insights from a reservoir, at a fraction of the cost of a PLT or wired system

QUICKER

The GeoFORM Flex system eliminates the use of a washpipe by modularly incorporating an MTV. Since a washpipe is not required for circulation, operators can save rig time and reduce rental expenses and logistics associated with wash pipe handling.

SAFER

In addition to providing advanced sand control capabilities, the GeoFORM Flex system significantly increases operational efficiency and reduces risk compared to conventional gravel- and frac-pack jobs. A typical gravel-pack or frac-pack operation can require a crew of 10 engineers and field specialists, as well as specialized blending and pumping equipment. Operational costs are further compounded when multizone frac-pack operations are performed. With the GeoFORM Flex system, sand control installation can be

APPLICATIONS

- Frac-pack alternative for reservoirs with fine sands
- Reservoirs requiring both sand control and inflow control
- Short-radius and sinusoidal wells
- Extended-reach wellbores in reservoirs with low fracture gradients
- Locations with sand control pumping constraints

BENEFITS

- Creates long-term, total wellbore conformance to prevent sand production
- Eliminates the need for a washpipe and reduces operating cost
- Offers superior modular adaptability for enhanced oil recovery and future water shut off
- Allows for higher circulation rates to be safely achieved
- Simplifies logistics and reduces the operational footprint

conducted by a two-person crew. No special pumping equipment, fluid, or proppant is needed; only the activation fluid. And once the fluid has been pumped, operations can proceed to the upper completion while the SMP media activates. This simplified method:

- Removes the need for additional personnel and equipment on board by eliminating the washpipe, thus reducing HSE exposure
- Allows for higher circulation rates to be safely achieved as the MTV protects the shape memory polymer against the risks associated with circulating pressures exceeding burst ratings

HOW IT WORKS

To overcome the challenges associated with conventional solutions, materials science experts from Baker Hughes developed Morphic™ shape memory polymer (SMP) material—an expandable filtration media that enables the GeoFORM Flex system to conform to the wellbore. During manufacturing, the outside diameter (OD) of the SMP media is sized slightly larger than the openhole wellbore. The material is then heated and compacted to a smaller OD and assembled onto a non-perforated basepipe. Non-perforated base pipe and MTV devices prevent tubing to annulus flow. After installation, an activation fluid is pumped downhole and triggers the SMP media to return to its original, larger OD. As the media expands, it forms a tight seal against the wellbore, providing total conformance, regardless of hole irregularities. And after activation, the SMP material maintains positive stress against the formation to stabilize the near-wellbore region. The system can be modularly coupled with inflow control devices (ICD's) for production enhancement and/or accessories enabling floatation without washpipes and sliding sleeves for shut-off capability. The MTV can be activated by pressuring up to the shear limit of the pistons and bleeding off to create annulus to tubing flow path. This complete coverage helps keep sand at bay, enabling optimal sustained production with significantly reduced risk of plugging or hot spotting.

