Increasing sand control reliability and maintaining injectivity

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To address the challenge of sandface injection flow control, Tendeka has developed Cascade3, a new well screen, flow control completion system which utilises intrinsic check-valves to prevent any back-flow or cross-flow during shut-ins. Depending on well conditions, it also limits the damaging effects of water-hammer.

Intelligent completion technology is currently controlled as part of a three-year R&D programme. A field trial was conducted with a major operator in the Gulf of Mexico to improve performance on water injections wells which had suffered severe loss of injectivity within a short period of completion. A Permian salt water disposal (SWD) well was used to test several aspects of functionality using multiple downhole memory gauges to record pressures at reservoir depth.

The SWD well has now been put on full-time water disposal duty for several months. Plans are currently in progress for the implementation of Cascade3 in an injector well on a deepwater Gulf of Mexico asset.

Cascade3 screen with intrinsic non-return valve (NRV) technology

Conventional Sand Control Challenges
1 - Water Hammer
2 - Crossflow
3 - Backflow

Cascade3 Solution
By preventing sand production, Cascade3 extends injection well life resulting in more oil production and greater recovery

Cascade3 Technology
High density of flow control valves mounted within conventional sand screens allows high water injection rates while increasing sand control reliability and maintaining injectivity over time.