

ReFlow Control

Advanced completion technology

Tendeka’s ReFlow Control Advanced Completion technology significantly improves reservoir recovery in Cyclic Gas Injection EOR by controlling the injection and production of gas.

The recovery efficiency of unconventional oil reserves is very low due to the micro-permeability of reservoirs and rapid depletion of pore pressure close to the fractures and wellbore.

Cyclic gas injection enhanced oil recovery (EOR) involves the injection of gas or carbon dioxide in fractured wells, and back-producing the injected gas and reservoir fluids in the same wellbore after a suitable soaking period (huff & puff).

The effective distribution of the injected gas in these wells and the ability to keep gas in the reservoir for maintaining energy and/or having longer contact with interstitial oil can greatly affect the recovery efficiency.

Tendeka’s ReFlow Control Advanced Completion technology deploys the company’s proprietary FloSure Autonomous Inflow Control Devices (AICDs) and Flocheck Injection valves to optimize this EOR method.

FloCheck Injection valves control flow in the injection direction and are used to balance the distribution of gas injection along the length of the wellbore. FloSure AICDs deliver a variable flow restriction in response to the properties (viscosity) of the fluid or gas flowing through it managing early back-production of gas.

When used in a horizontal well and segmented into multiple compartments with Tendeka’s SwellRight series of swellable open hole isolation solutions, this design prevents excessive production of gas after breakthrough occurs in one or more compartments producing gas.

The result is more effective pressure maintenance, extended soak times and ultimately, increased reservoir recovery.

Features

- Bias closed Flocheck Injection Valves along length of completion
- Flow of gas through FloSure AICDs generates higher pressure drop than oil
- Segmented wellbore

Benefits

- Even distribution of gas to all zones along the length of the wellbore
- Restricts zones producing free gas to keep gas in contact with reservoir at high pressure to maximise interaction with oil
- Restriction limited to zone affected by gas production
- Improved oil recovery

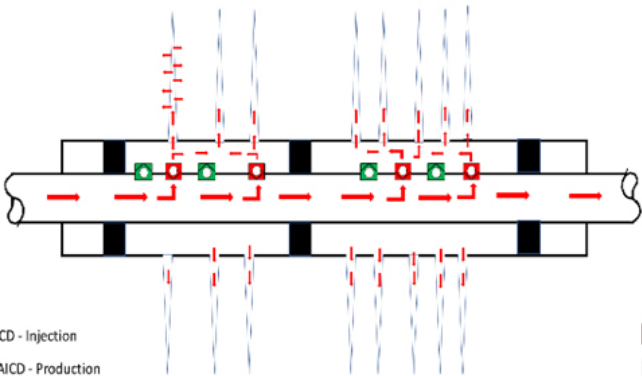
Technical Specification

Case	Total Oil Production by 01/01/2026 (MSTB)	Increment wrt Natural Depletion (%)	Total Oil Production by 01/01/2030 (MSTB)	Increment wrt Natural Depletion (%)
Natural Depletion	112.4	-	140.8	-
Huff & Puff Conventional Completion	157.1	40	165.7	18
Huff & Puff Advanced Completion	176.1	57	192.7	37





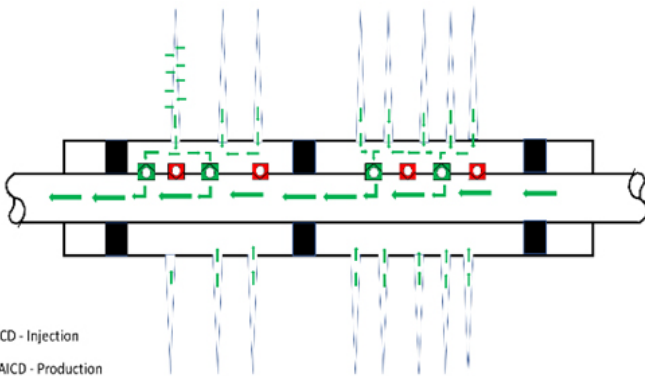
Gas Injection Mode



- ICD - Injection
- AICD - Production

Even distribution of gas to all zones along length of wellbore

Oil Production Mode

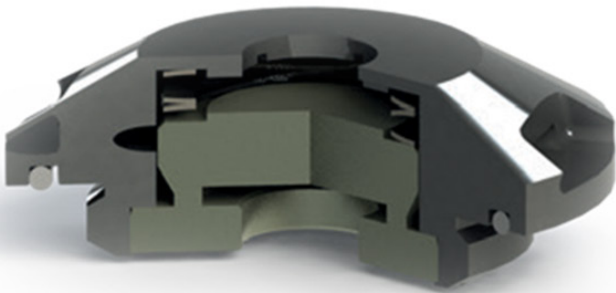


- ICD - Injection
- AICD - Production

Produce oil with as little back pressure as possible



FloSure AICD



FloCheck Injection Valve