

80% Gas Reduction - 20 Well Application with Light Oil in a Brownfield

A major oilfield in the Middle East that has a major gas cap and has been on production since the 1960's has gas communication through its fracture network. The operator had aggressive gas breakthrough throughout the field and many of the wells also suffered from a large increase in water production.

The high GOR (gas oil ratio) made the wells un-productive and the operator had to shut wells in, leaving significant oil reserves and production stranded. Maintaining oil production was a challenge due to increased gas and water ingress.

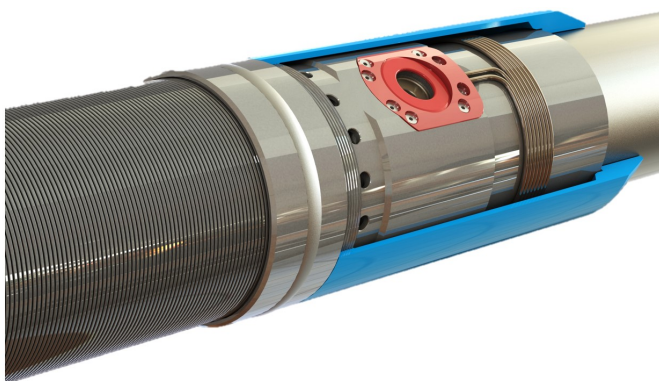
Overview

- **Location:** Middle East
- **Operator:** Major Middle East E&P
- **Deployment:** Land, mature brown-field
- **Reservoir:** Carbonate, GOGD (gas oil gravity drainage)
- **Oil viscosity:** 2 - 3 cP
- **Number of wells:** 20 wells deployed AICV®
- **Completion:** Horizontal oil production wells with 4-1/2" AICV® wire wrap screen and swell packers, up to 22 AICV® joints.



Challenges / Objectives

- High GOR (gas oil ratio) and light oil with fractured carbonate reservoir.
- Stand alone screens and swell packers were not capable of restricting gas breakthrough.
- Due to no downhole control the operator had to choke the wells back -or- in worse cases, shut-in the wells due to high GOR.



Results

Well A Production Performance:

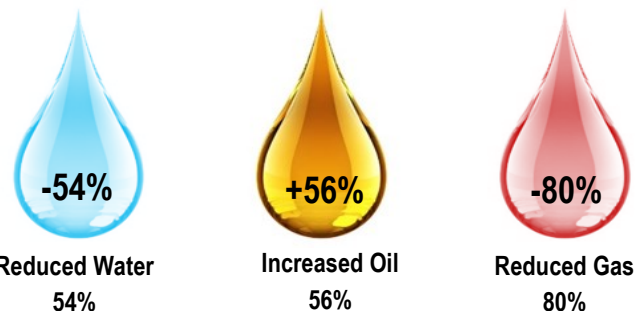
- 80% reduction of un-wanted Gas to only solution gas.
- Reduced Water Cut from 80% down to 26%.
- Increased oil production +56%

Well B Production Performance:

- Reduced the wells total gas production by 83%.
- Gas production control enabled the wells to double Oil production rate.

Field overview Results:

- Dramatically lowered OPEX costs vs. normal well.
- Pay back in ~3 months.
- Enabled stranded shut-in wells to become 'economic'.

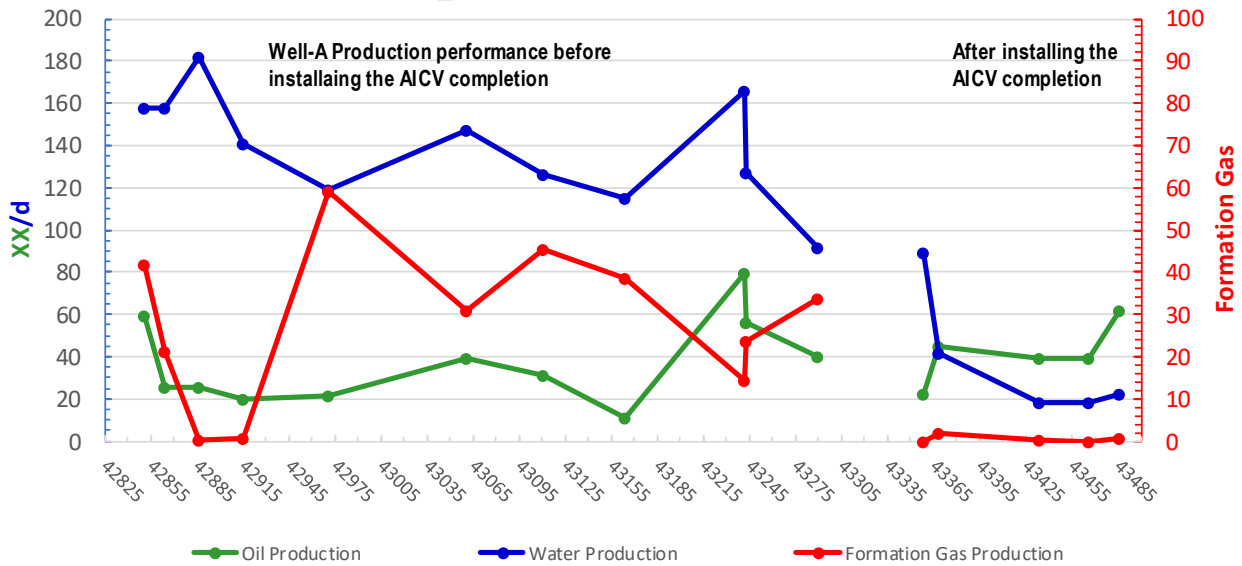


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This major Middle East operator experienced positive success with the application of AICV® lower completions in over 20 wells. The AICVs provided low-cost capabilities for the operator to autonomously manage the un-wanted gas and water while enabling the oil to be produced from the oil-rich zones as the AICVs remain open for oil and close for gas and water. AICV® completions are simple, reliable, low cost and require zero intervention to provide reservoir management capabilities for the operator.

Reference publication: "Case Study: Utilizing of Autonomous InflowControl Valves Helps to have Better Fahud Wells Production Performance", Maamari, H., PDO; Abd El-Fattah, M., Mathiesen, V., InflowControl AS. Mediterranean Offshore Conference & Exhibition, Alexandria, Egypt, October 15-17, 2019

Well_A well Production Performance



Well_B well Production Performance

