ESS® Expandable Sand Screens Enables Petrogas E&P to Extend Life of Field Using Existing Wellbore to Target Fine Sand Reservoir

Objectives

- Sidetrack out of an existing low-performance well to target low-pressure methane gas from a shallower, fine-grained sandstone reservoir.
- Install a sand-control solution capable of retaining fine sands and maintaining formation integrity.
- Facilitate a reliable, highly productive well.

Our Approach

- Weatherford sand-control experts met with Petrogas E&P engineers to evaluate a productive gas sand and identify the optimal sand-control solution for a North Sea well.
- Following sand-grain and wellbore-fluid analyses, as well as geomechanics and erosion evaluations, the Weatherford experts recommended installing ESS expandable sand screens. Compliant expansion of the ESS screens would eliminate the annular space to stabilize the horizontal wellbore while controlling sand production. Next, the team generated in-depth torque and drag models to confirm that the completion system could be deployed and expanded within the very shallow, highly deviated well path.
- A Weatherford project management team coordinated planning, procurement, preparation, and delivery of the sand screens and associated completion equipment.
- On board the platform, a Weatherford crew ran the expandable sand screens to bottom through a 6-in. openhole section. Using a compliant expansion tool, they expanded 1,400 ft (425 m) of 120 micron, 4 1/2-in. screen without incurring nonproductive time.

Value to Customer

- The 4 1/2-in. ESS system enabled Petrogas E&P to complete the sidetrack well within a fine-grained sandstone reservoir and increase production in an existing field with minimal expense.
- ESS technology provided opportunities to access reserves that were not previously producible using conventional completion methods.
- The customer achieved sand-free production at rates 50% greater than anticipated.
- This ESS installation may serve as a template for extending field life as production in the deeper formation declines.

This North Sea platform has been in operation since 2007. A sand-free completion installed across a shallow sandstone reservoir will extend production far beyond the 10 years initially envisaged.

OPERATOR
Petrogas E&P

LOCATION
The Netherlands North Sea

FIELD
A12

WELL TYPE
Openhole gas producer

FORMATION
Sandstone

HOLE SIZE AND ANGLE
6-in. hole, 90° deviation

DEPTH
3,840 ft (1,170 m)

PRODUCTS/SERVICES
4 1/2-in. ESS expandable sand screens

Weatherford®