MZ-Xpress System Saves More Than 7 Days in Rig Time
Chevron reduces its costs and increases production in Indonesian Attaka field

CHALLENGE
Improve efficiency of the sand control operations while increasing production in depleted, unconsolidated, laminated formation.

SOLUTION
Eliminate multiple gravel- and frac-pack runs by using the MZ-Xpress® system, which performs multizone fracturing and gravel packing in a single trip.

RESULTS
Completed entire fracture-stimulation process in only 9.2 days compared with an estimated 16.6 days for a traditional stacked completion, saved approximately USD 1,665,000 in rig time, and increased production 2.5 times more than the initial estimation.

Improve efficiency, increase production
The depleted Indonesian Attaka field features three distinct, unconsolidated, laminated sand layers. The traditional technique for completing and fracture-stimulating multilayered reservoirs such as this requires multiple trips in and out of the well and long-term mobilization of surface equipment. Chevron wanted to improve the efficiency of its sand control operations while increasing production for its Juliet 02 well.

Eliminate multiple runs, minimize fluid loss
The MZ-Xpress system for cased hole sand control was chosen because of its ability to perform multizone gravel or frac packing in a single trip. Eliminating multiple trips in and out of the well reduces both rig time and the standby time for surface pumping equipment. Moreover, the system’s architecture allows high pump rates and proppant capacity, which helps optimize the stimulation treatment.

With this system, after all zones of interests are perforated, all the downhole completion equipment is deployed, set, and tested in just one trip downhole. The individual treatments (gravel or frac packing) for each zone can then be performed with a minimum amount of time between operations. The screen valves—spaced out to cover the planned producing intervals—are initially closed to isolate the zones and minimize fluid loss while the service tool is run in and out of the hole.

The MZ-Xpress system is compatible with intelligent completion components and with Alternate Path† technology.
After all the zones are treated, the service tool is removed from the well and the production tubing is installed. The screen valves are then opened selectively with a shifting tool run inhole via slickline or coiled tubing, putting the well into production. Production can be either commingled or selectively produced.

The MZ-Xpress system uses direct wire-wrapped screens with slot openings that can be tailored for appropriate gravel or proppant sizes. The screen basepipe is unperforated, providing complete isolation when adjacent valve assemblies are closed during run-in-hole operations. This design permits the gravel pack and isolation packers to be set without the need to drop a setting ball, thereby saving valuable rig time.

For the Juliet 02 well, 7-in casing was placed across the laminated intervals. Three zones were perforated, after which the MZ-Xpress system was installed in the casing. The three perforated intervals were fracture-stimulated using the high-rate gravel-pack technique.

ClearFrac XT* expanded-temperature-range fracturing fluid was used with 4% potassium chloride (KCl), which is especially effective for stabilizing the formation. The solids-free ClearFrac XT fluid leaves no damage in the proppant pack, thereby significantly reducing fracture cleanup time. Its enhanced viscoelastic property provides excellent proppant transport at low surfactant concentrations and viscosities.

When the upper completion was landed, the two upper screen valves were opened via slickline to put the well into production.

**Saved time and costs, increased production**

The entire fracture-stimulation process took only 9.2 days from wellbore cleanout trip until the MZ-Xpress service tool was pulled out of the hole. A traditional stacked completion operation with this well configuration would have taken approximately 16.6 days. The time saved—7.4 days—was equal to approximately USD 1,665,000 (about USD 225,000 per rig day) overall. Because of the high pump rates and proppant capacity, production was much higher than expected—2.5 times more than the initial estimation.