

JOINT EVENT

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Horizontal multistage frac utilizing degradable balls in low permeability sandstone formationHossam H Elmasry¹, Mohamed A Anwar¹, Samir I Zayed¹, Hany R Elrayek¹ and Omar A Elmaghraby²¹Petrobrel – Eni, Egypt²Halliburton, Egypt

The aim to contact more surface area in the pay zone is essential in low to moderate permeability formations. This is achieved through drilling lateral section holes targeting to enhance productivity. Well BB-14 is produced from Sidri formation in Gulf of Suez (zone IV) which accounts for 27 % of the total reserve of Belayim land fields and currently contributes 25% to the total production. This constitutes the need to increase the recovery factor from that zone. Belayim bay area is located in the south east of Belayim land field and most of the wells are produced by Sidri member and has characteristics of low to moderate sandstone permeability which requires stimulation to contact more pay zone surface area to enhance production and achieve its sustainability. An original approach was done on that member through well BB-14 where horizontal lateral section was drilled with the aim to horizontally extend along zone IV and select the sweetest spots to perform Multistage frac. Hydraulic proppant frac was optimized utilizing frac sleeves and shifting between stages with degradable balls technology. This technique would ensure maximum efficiency for every stage to be treated and also minimize treatment time. The hydraulic fracture treatment was placed successfully, shifting between stages was performed and post frac runs using coiled tubing ensured clear path. This indicated that degradable balls actually dissolved allowing hydrocarbon to flow through completion and save milling out operations. The well showed good results reaching nearly double the production from the corresponding vertically stimulated wells with hydraulic fracs. This is shown in the production rate and productivity index of the well. The paper will summarize the past efforts done to develop Sidri member and demonstrate the work done in designing, executing and producing the multistage fracking technique in horizontal wells.

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