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FIELD CASE, HASSI MESSAOUD

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HASSI MESSAOUD, the Algerian giant oil field is actually the largest oil producer with nearly 400 000 STB /day; with 500 producing wells. The Cambro Ordovician sandstone reservoir is subdivided in four layers: Ri, Ra, R2, and R3.

In forty years, the cumulative oil production approaches half of the reserves. The field development went from natural depletion to miscible gas injection and water injection in different sectors. Actually, the miscible gas injection is the main process throughout the field. More than 280 billion m³ of gas have been injected gradually in the reservoir .55 million m³/day is the actual injection rate.

Lately, horizontal wells enabled us to get a better geological understanding of the reservoir and therefore reconsider the development scheme. This new image gives a better understanding of the reservoir heterogeneity as well as the impact of fissures; and a better simulation modelling of the injected gas displacement. The recent work on characterisation of the compact R2 reservoir as well as the horizontal wells drilled, show a real potential for its development.

Pilots have been initiated to complete the study, Re-entries of vertical wells initially dry or poor producers, as well as horizontal wells confirmed the hypotheses of alternance of the reservoir characteristics which showed additional reserves especially in the North and North-West part of the field periphery.

The surface network already saturated is actually being reviewed to fit the actual production as well as the development plan. The aim of this paper is a field overview with its history and particularities.