Abstract

The Hassi R'Mel field, which is the largest gas field in Algeria, produces principally gas condensate. The produced gas and oil comes from four reservoirs of Triassic age (reservoir A, reservoir B, reservoir C, and the Lower Series). All the previous studies in this field focused only on the upper reservoirs (A, B, and C), which have shown an excellent petrophysical properties. However, due to the presence of shale facies as well as volcanic intrusions, the Lower Series reservoir has been less explored. Thus, our study is mainly focused on this Lower Series in order to find the best sandy levels. The aim of this paper was to determine the facies types in the area, their distribution in the southern area of the Hassi R'Mel gas field, and their depositional environment. The Triassic rocks in this field are divided into four formations. From the youngest to oldest, these are S4, Lower Shale, Horizon A, and the Lower Series. The Lower Series formation can be further divided into three members (shaly sandstone, andesite, and lower shale). The shaly sandstone member within the Lower Series is composed of four units that are present all over the study area with an important pinch-out toward the northern part. The depositional environment within the defined units is a braided fluvial system in the southern part that evolves into a meandering fluvial system toward the north. Thus, the study area is considered to be a transitional zone between two depositional systems.