Petrophysical study of Shale gas potential from the Permian Roseneath and Murteree Formations in the Cooper Basin, Australia

Quaid Khan Jadoon[1]

[1]*School of Earth & Environmental Sciences James Cook University Australia.*

Abstract

During the Late Carboniferous and Early Permian a number of intracratonic basins were initiated on the Gondwana age part of the Pangean Supercontinent. The Cooper Basin is one of the largest of Australia's Gondwanan intracratonic basins, and extends from northern South Australia into southwestern Queensland covering approximately 130,000km2.The South Australia part of the basin is divided into three major depocentres,the Patchwara, Nappameri and Tenappera troughs. The troughs are separated by two structural highs, the elongate complex, Gidgealpa Merrimelia-Innmincka Ridge, and the smaller more quant Murteree Ridge (Gravesock, et al.,1998; Hill and Gravestock,1995).The ridges consist in the main of fault-ruptured asymmetric anticlines that are generally eroded and devoid of early Permian sediments. Like most intracratonic settings, the Cooper Basin is polyphase and contains a thick Permian (1600m) to Triassic succession of fluvial, lacustrine and, at the base, glacial rocks. The succession overlies, in part, the early Paleozoic rocks of the Warburton Basin and in turn overlain by the Jurassic to Cretaceous rocks of the Eromanga Basin.