ASSESSING THE UNCONVENTIONAL HYDROCARBON RESOURCE POTENTIAL OF KAROO BASIN OF SOUTH AFRICA

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ABSTRACT

The late Carboniferous to Jurassic aged Karoo Basin of South Africa currently experience increased interest regarding its unconventional petroleum resources. The basin is classified as the 8th largest potential shale gas resource globally (US Energy Information Agency, 2015) and is also known for its coal bed methane and biogenic gas potential evident by current exploration and production activities.

Exploration and development of unconventional petroleum resources in South Africa is still at the early stages. The drafting of policies and regulations governing the exploration and exploitation of such unconventional resources requires an understanding of the parameters used in assessing unconventional hydrocarbon resources and constraints on the size of the recoverable resources.

This paper aims to discuss the methodology used in the assessing of the unconventional petroleum resources of the Karoo Basin, which is Common Risk Segment Mapping. The method uses a spatial geographic interpolation of the various assessment parameters to interpreted areas of low, moderate and high prospectivity.

The assessment criteria is based on the following; open access literature and global analogues, legacy data and where applicable current exploration data, 1D basin modelling and deterministic and probabilistic resource estimation.