Dynamic Global Processes Including Mantle Plume Generation Assist in Hydrocarbon Emplacement in Sedimentary Basins

Allen Lowrie[1] and Mikio Fukuhara[2]

[1]GeoResources, Inc., 238 F. Z. Goss Rd., Picayune, Mississippi 39466

[2]Tohoku University, New Industry Creation Hatchery Center, Sendai 39466, Japan

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ABSTRACT

In this testament of hydrcarbon location and emplacement; it is essential to conceive that the layers from at least the upper mantle to the semi-plastic lower crust to brittle--semi-brittle upper crust, sediment and/or oceanographic cover into overlying atmosphere as a single and complex interrelating unit. In addition, inputs arising from probable nuclear fusion with the lower mantle to core need be also incorporated.

Connecting pathways within and between the various layers need be various, ranging from discrete breakage zones to regions of weakness , including mechanical and structural. Within these ranges, a continuum of gases—fluids—magmas can ascend and descend relatively directly along breaks and more leisurely along permeable weak corridors.

Earthquake seismology reveals concentric rings of differing mass from surface to planetary center. Further speculation on second order configuration of our planet ranges from numerous buoyant plumes to convection cells to an undeciphered amalgam of both. Theoretical computations indicate sufficient pressures and components in lower mantle-core that nuclear fusion could occur. Potential heterogeneity suggests dispersed fusion generation. Heat generation from Earth interior is the result of three-body nuclear fusion of deuteron confined by hexagonal FeO core-center crystals. The heat generated is transported from the inner to outer core and then produces mantle flow passing through the core-mantle transition zone. Localized heat formation seems appropriate for discrete and desperate mantle plume generation.

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