

In Search of CO₂: Gravity and Magnetic Data for Eor Prospect Generation in Central Libya

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Abstract : Enhanced oil recovery using carbon dioxide (CO₂-EOR) is a method that can increase oil production beyond what is typically achievable using conventional recovery methods by injecting and hence storing, carbon dioxide (CO₂) in the oil reservoir. In Libya, plans are underway to source a proportion of this CO₂ from subsurface geology that is known from previous drilling to contain high volumes of CO₂. But first, these subsurface volumes need to be more clearly defined and understood. Focusing on the Al-Harouj region of central Libya, ground gravity and airborne magnetic data from the LPI database and the African Magnetic Mapping Project respectively have been prepared and processed by Libyan Petroleum Institute (LPI) and Reid Geophysics Limited (RGL) to produce a range of grids and related products suitable for interpreting geological structure and to make recommendations for subsequent work that will assist CO₂ exploration for purposes of enhanced oil recovery (EOR).

Keywords : gravity anomaly, magnetic anomaly, DEDUCED lineaments, Total horizontal derivative, upward-continuation

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