



Geology; Researchers at University of Texas Austin Release New Data on Geology (The Nature and Origins of Decametre-scale Porosity In Ordovician Carbonate Rocks, Halahatang Oilfield, Tarim Basin, China)

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2020 OCT 9 (VerticalNews) -- By a News Reporter-Staff News Editor at Energy Weekly News -- New research on Geology is the subject of a report. According to news reporting originating from Austin, Texas, by VerticalNews correspondents, research stated, "At >7 km depths in the Tarim Basin, hydrocarbon reservoirs in Ordovician rocks of the Yijianfang Formation contain large cavities (c. 10 m or more), vugs, fractures and porous fault rocks. Although some Yijianfang Formation outcrops contain shallow (formed near surface) palaeokarst features, cores from the Halahatang oilfield lack penetrative palaeokarst evidence."

Funders for this research include CNPC-USA, CNPC-Tarim Oilfield Company, Fracture Research and Application Consortium at the **Bureau of Economic Geology**, Chemical Sciences, Geosciences and Biosciences Division, Office of Basic Energy Sciences, Office of Science, US Department of Energy.

Our news editors obtained a quote from the research from the University of Texas Austin, "Outcrop palaeokarst cavities and opening-mode fractures are mostly mineral filled but some show evidence of secondary dissolution and fault rocks are locally highly (c. 30%) porous. Cores contain textural evidence of repeated formation of dissolution cavities and subsequent filling by cement. Calcite isotopic analyses indicate depths between c. 220 and 2000 m. Correlation of core and image logs shows abundant cement-filled vugs associated with decametre-scale fractured zones with open cavities that host hydrocarbons. A Sm-Nd isochron age of 400 +/- 37 Ma for fracture-filling fluorite indicates that cavities in core formed and were partially cemented prior to the Carboniferous, predating Permian oil emplacement. Repeated creation and filling of vugs, timing constraints and the association of vugs with large cavities suggest dissolution related to fractures and faults."

According to the news editors, the research concluded: "In the current high-strain-rate regime, corroborated by velocity gradient tensor analysis of global positioning system (GPS) data, rapid horizontal extension could promote connection of porous and/or solution-enlarged fault rock, fractures and cavities."

For more information on this research see: The Nature and Origins of Decametre-scale Porosity In Ordovician Carbonate Rocks, Halahatang Oilfield, Tarim Basin, China. Journal of the Geological Society, 2020;177(5):1074-1091. Journal of the Geological Society can be contacted at: Geological Soc Publ House, Unit 7, Brassmill Enterprise Centre, Brassmill Lane, Bath BA1 3JN, Avon, England.

The news editors report that additional information may be obtained by contacting Estibalitz Ukar, University of Texas Austin, Jackson School of Geosciences, Bur Econ Geol, Univ Stn Box X, Austin, TX 78713, United States. Additional authors for this research include Vinyet Baques, Stephen E. Laubach and Randall Marrett.

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