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**Fuel Research; Findings in Fuel Research Reported from University of Texas Austin (Effects of Pore Fluids On Methane Sorption In the Lower Bakken Shales, Williston Basin, Usa)**

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2020 DEC 25 (VerticalNews) -- By a News Reporter-Staff News Editor at Energy Weekly News -- Research findings on Fuel Research are discussed in a new report. According to news reporting from Austin, Texas, by VerticalNews journalists, research stated, "Compositional variation and distribution of pore fluids (water, oil, and asphaltenes) as a function of thermal maturity can greatly affect methane sorption in organic-rich shales. Five Lower Bakken organic-rich shale samples with varied thermal maturity from marginal maturity to oil-to-gas cracking were used in this study to assess this effect."

Funders for this research include National Science Foundation of China, Fundamental Research Funds for the Central Universities, National Science and Technology Major Project, **Bureau of Economic Geology**'s Mudrock Systems Research Laboratory (MSRL) consortium.

The news correspondents obtained a quote from the research from the University of Texas Austin, "Pore fluids were extracted from samples at four sequential stages: as-received, oven-dried, pentane-extracted, and dichloromethane-extracted; Four aliquots for each sample were used to quantify the effect of water, mobile oil, and asphaltenes on gas sorption. CH4 sorption isotherms were measured at 35 degrees C, 50 degrees C, and 65 degrees C. The results show that presence of pore fluid reduces the CH4 sorption capacity of shale, and the extent of this reduction depends largely on the types of pore fluids. The reduction of CH4 sorption capacity basically follows a linear correlation with moisture content. The effect of mobile oil is 4-5 times greater than that of water. Asphaltenes have no effect on methane sorption capacity for the marginally mature-mature samples but cause a drastic decrease of sorption capacity at the early oil-to-gas cracking. The surfaces of OM-hosted pores are probably coated by asphaltenes, while mobile oil is distributed in the center of the pores, and water mainly occupies the clay-mineral-hosted pores. The sorption sites will increase significantly once oil cracking to gas starts, which is probably associated with pyrobitumen formation."

According to the news reporters, the research concluded: "The affinity of CH4 for sorption on pyrobitumen is stronger than that on residual kerogen."

This research has been peer-reviewed.

For more information on this research see: Effects of Pore Fluids On Methane Sorption In the Lower Bakken Shales, Williston Basin, Usa. Fuel, 2020;282. Fuel can be contacted at: Elsevier Sci Ltd, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, Oxon, England. (Elsevier - www.elsevier.com; Fuel - www.journals.elsevier.com/fuel/)

Our news journalists report that additional information may be obtained by contacting Tongwei Zhang, University of Texas Austin, Bur Econ Geol, 10100 Burnet Rd, Austin, TX 78758, United States. Additional authors for this research include Xuan Tang, Jinchuan Zhang, Xun Sun, Chenjun Wu and Zhijun Jin.

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