

OIL AND GAS MATURATION ZONES IN THE JURASSIC AND CRETACEOUS TRENDS OF NORTHWEST FLORIDA, GEORGIA, AND ALABAMA

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ABSTRACT

A new, higher-resolution, computer-contoured, geothermal gradient map was generated for the Jurassic and Cretaceous trends of Northwest Florida, Georgia and Alabama. From this map, and using published temperatures for oil and gas maturation and destruction, optimum prospective areas for the Smackover and Ferry Lake horizons were mapped. Productive zones in the Jurassic Smackover are located between the 260° and 330°F isotherms, with the lower range yielding oil, and the upper range yielding gas and condensate.

The isothermal map of the Lower Cretaceous Ferry Lake Formation indicates that all of Georgia, eastern Alabama, and Florida east of the Apalachicola River are cooler than the 160°F minimum temperature for oil maturation in rocks of that age. This area has a high probability of being barren. However, southwestern Alabama registers temperatures as high as 280°F, which is warm enough for wet gas, as well as oil in the cooler parts. Undrilled areas in these maturation zones should be re-examined for prospects in the Lower Cretaceous — Ferry Lake equivalents.

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