



## Precambrian Basement is an Important Control on Subsidence, Heat Flow, and Maturation in the Delaware Basin

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### ABSTRACT

The Precambrian basement fabric underlying the Permian Basin was re-activated in three events: (1) formation of the ENE-trending and linear Abilene gravity minimum as a Precambrian suture zone and/or rift flanked by volcanic arcs; (2) formation of the early Paleozoic Tabosa Basin, a NNW-trending, failed rift and sag formed at high angle to the Cambrian, rifted margin; and (3) reactivation of both of these near-orthogonal, Precambrian basement trends during the Ouachita-Marathon-Ancestral Rockies orogenic event. In this study we have compiled all these Precambrian basement trends and inferred lithologies using gravity, magnetic, 3D seismic grids, and wells to basement in order to show how Precambrian basement features control measured heat flows, maturation of Wolfcampian sources, and sweet spots for both conventional and unconventional production trends. We use the basement map to predict sweet spots for both conventional and unconventional resources.

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## NOTES

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