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Depositional Trends And Porosity Zone Development In The Big Lime (Greenbrier), Mingo And Logan Counties, West Virginia

Finding productive zones in the Big Lime (Greenbrier) hasn't always been a primary concern for developing acreage. There are numerous potential shallow natural gas reservoirs in southern West Virginia both above and below the Big Lime that have more consistent geometries and can be counted on to produce economic volumes. The Big Lime has produced multiple Bcf from wells in the study area and continues to be an appealing, although somewhat elusive target. In order to more effectively develop acreage where the Big Lime has potential, it is important to understand the geometry of the reservoir targets. In the case of the Big Lime, the target zone includes several oolitic porosity zones in the lower part of the section. Available studies of the Big Lime make primary use of outcrops or well cuttings in describing stratigraphy and petrology. A few studies used wireline logs, but they have either been on a statewide scale with very few wells or at field size where the well data was limited to the vicinity of a small productive field. The detailed stratigraphic analysis and correlation in this study makes use of several hundred wireline logs in Mingo and Logan Counties. The interval mapping is far more detailed than other currently available studies. This study sheds new light on the nature of the McCrady erosional surface at the base of the Big Lime section and its relationship to the development of the Big Lime, its potentially productive porosity zones, and its depositional trends.