



Barnett Shale-Woodford Shale Play of the Delaware Basin – Is it Another Giant Shale Gas Field in Texas?

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Abstract

A thick section of organic rich shales is found in the deep part of the Delaware basin of west Texas. Leasing activity targeting this potential shale gas resource has been concentrated in two counties, Reeves and Culberson, with several companies amassing leasehold positions ranging from a few tens of thousands of acres to nearly a million acres, and is rapidly spilling over into adjoining counties of both Texas and southeast New Mexico.

The combined thickness of radioactive Woodford (Devonian) and Barnett (Mississippian) Shales approaches 1000 ft. The Woodford has extremely high gamma ray intensity, exceeding 300 API units in the middle part, whereas the Barnett may have lower average TOC based upon gamma ray values of 150 to 200 API. Average bulk densities of the two units are comparable with the Woodford showing lower average densities to the south and east. The drilling depth to the base of the shales ranges from 6000 ft to over 19000 ft in extreme northern Reeves County. Published vitrinite reflectance data indicate much of the play area lies within the gas window.

What we know at this time is based on nearly 400 wells drilled through the Barnett-Woodford on the way to deeper, conventional objectives. Modern log suites are available for about 250 wells, there are numerous cuttings sets and sample descriptions, gas shows were reported in many wells, but the shales were not cored. Several tests have been drilled in the last 18 months to test the shales, some of which were cored and are being currently tested, but the data are still highly confidential. On an area and net thickness basis alone the play appears to have multi-TCF potential, but whether commercial flow rates can be established remains to be seen.