Spiro Equivalent between the Windingstair and Ti Valley Faults: Implications for Correlation of the Atoka Formation in the Ouachita Fold-Thurst Belt

Dennis R. Kerr[1] (1) The University of Tulsa, Tulsa, OK

Previously unreported occurrences of a skeletal-moldic sandstone, here regarded as the Spiro equivalent, have been discovered along OK-2 and OK-82 in Latimer County between the Windingstair and Ti Valley faults. Macroscopic petrology of these occurrences is identical to reported Spiro south of the Choctow fault on OK-82. This unique sandstone is considered a marker bed within the thick deepwater deposits of the Atoka Formation and Johns Valley Shale. Spiro equivalent occurs within lithology typical of the Johns Valley Shale in an outcrop south of Bengal on OK-82. This marker progressively rises stratigraphically within the Atoka Formation southward along OK-82 to the Windingstair Mountains. The Spiro also occurs in exposures of Atoka Formation along OK-2 where it is several tens of meters above the contact with the underlying Johns Valley Shale. Other authors have reported occurrence of a similar unique sandstone elsewhere. The clear implication resulting from the recognition of the Spiro equivalent is that the lithostratigraphic boundary between the Atoka Formation and Johns Valley Shale is not the same age everywhere with in the Ouachita fold-thrust belt. In other words, the lithologies assigned to the Atoka and Johns Valley should be regarded as a facies change.