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Unraveling the Stratigraphic Architecture of the Bossier: Pseudo-Seismic Correlation of Well Logs in Dew-Mimms Field, Freestone County, Texas

In order to identify the stratigraphic architecture of the Jurassic Bossier sands in Dew-Mimms Field (Freestone County, Texas), well logs from over 300 wells drilled in the field are stacked along "pseudo-seismic" cross sections. These cross sections consist of either gamma ray or resistivity logs shaded to resemble seismic traces. The logs are displayed with very close, constant spacing between wells, and vertical scales are increased to allow for interpretation of large-scale stacking patterns. We use this technique in Dew-Mimms field to interpret several prograding deltaic lobes in the Upper Bossier interval.

This technique is a major improvement over traditional lithostratigraphic correlation because we correlate chronostratigraphic surfaces. These surfaces delineate the sequence stratigraphic framework of the Bossier section. We map these surfaces and create isopach maps for individual parasequences, interpreted to be deltaic lobes. Within each lobe, we use traditional log interpretation to classify log patterns into facies. This technique allows us to correlate production data with individual lobes and facies within these lobes. The establishment of a sequence stratigraphic framework allows us to explore more efficiently outside the field, and the correlation of production with lobes and facies allows us to optimize development drilling within the field.