

## **Correlation of Eagle Ford South Texas Eaglebine East Texas and Tuscaloosa Louisiana-Mississippi Using Sequence Stratigraphic Analysis**

**Walter W. Wornardt<sup>1</sup>**

<sup>1</sup>MICRO-STRATA Inc.

### **Abstract**

Twenty-five wells were analyzed and used to correlate the Eagle Ford South Texas Eaglebine East Texas to the Tuscaloosa in Louisiana-Mississippi using Sequence Stratigraphic Analysis. Seven (7) third order Galloway type sequences and eight (8) bounding maximum flooding surfaces (MFS) were identified and correlated in 26 wells from Webb County in Texas to Wilkinson Counties in Mississippi. It is important to correlate to the Tuscaloosa TMS because it is an emerging play and a new oil reservoir in Mississippi and Louisiana. In order to understand the complex relationship vertically and laterally of the Eagle Ford, Eaglebine and Tuscaloosa Calcareous Nannofossil and Foraminiferal high resolution biostratigraphic analysis and well log Maximum Flooding Surface Sequence Stratigraphy was completed on 25 wells.

Sequences range from Cenomanian 2 (Ce2) in the Buda, Maness, Woodbine, and Eagle Ford to Turonian 4 (Tu4) 88.77Ma MFS in lower Austin. The Maness Shale, South Texas to Mississippi is characterized by Ce3 (95.69Ma) MFS. The Cenomanian Eagle Ford and lower Tuscaloosa are characterized by Ce4 (94.75Ma), Ce5 (93.10Ma) MFS. The Turonian Eagle Ford, Eaglebine and upper Tuscaloosa are characterized by the Tu1 (91.41Ma) to Tu4 (88.77Ma) MFS.

Unconformities are recognized from South to East Texas to Louisiana-Mississippi at the tops of the Buda, Washita, Maness, Cenomanian Eagle Ford, Woodbine Group, Cenomanian Turonian boundary, Turonian Eagle Ford and Eagle Ford Group in the Tuscaloosa.

Because unconformities represent time and sediments missing they have a direct effect on the thickness of Galloway sequences within the Eagle Ford, Eaglebine and Tuscaloosa. The Cenomanian-Turonian unconformity is important because it may have eroded part of the richness zone in Cenomanian-Turonian Eagle Ford, Woodbine Group and TMS in Tuscaloosa affecting the exploration in these unconventional plays.