Student	David Lee Clay
Discipline	energy
Title	RESERVOIR ANALYSIS AND DEPOSITIONAL SYSTEMS OF THE UPPER CRETACEOUS WOODBINE GROUP IN THE MEXIA FAUL
Adviser	Richard J Chuchla
Keywords	Woodbine, Mexia, Oil, Deposition

The Mexia oil field, discovered in 1920, has produced 110 million barrels of oil from Upper Cretaceous sandstone reservoirs of the Woodbine Group. The Woodbine Group is primarily composed of siliciclastic sandstones, siltstones and mudstones that have been divided, by flooding surfaces, into nine depositional cycles. Most of these depositional cycles are fluvial-dominated deltaic in origin, with others of wave-modified deltaic origin. The depositional cycles are important in defining reservoir heterogeneities in the Mexia Fault Trend oil fields. The Woodbine sandstones are highly effective water-drive reservoirs. However, historical field development methods, such as high volumes flow rates, were ineffective at maximizing the fieldsâ recovery. This study is the first to recognize and map individual Woodbine depositional cycles in the Mexia Fault Trend to explore how to maximize future oil recovery efforts.

This study also researched the historical development of Mexia Field cooperatively with new digital production data sources. Combining historical production data with new mapping of the depositional cycles and their net sandstones reservoir units uncovered significant bypassed oil reserves. Undrilled infill locations were identified, then analog production for each reservoir unit was scaled to a field-wide redevelopment drilling program. In Mexia Field, an estimated 51 million barrels of oil remains to be produced. This analog study can be utilized to assess other Mexia Fault Trend fields. The fault line fields contain approximately 559 million barrels of original oil in place. A similar study on each individual oil field could lead to over 66 million additional barrels of oil.