Frequency and Distribution of Carbonate Gravity Flow Deposits in the Wolfcampian of the Southwestern Midland Basin

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GCAGS Explore & Discover Article #00396*  
Posted September 29, 2018.

*Article based on an abstract published in the GCAGS Transactions (see footnote reference below) and delivered as a poster presentation at the 68th Annual GCAGS Convention and 65th Annual GCSSEPM Meeting in Shreveport, Louisiana, September 30–October 2, 2018.

ABSTRACT

Transitional sediments on carbonate ramp slopes act as a link to relatively well studied platform and basin depositional environments. In the southern Midland Basin, the key to understanding the relationship between these environments lies in the allochthonous gravity flow sediments found on the slope. Upper Wolfcampian to lower Leonardian sediments shed off from the Central Basin Platform create a complex pattern of interbedded shale and carbonate gravity flow deposits. Whole core examinations along with petrophysical data from logs of Northwestern Crockett County wells allow interpretation of flow events into rheologically classified packages that include cohesive debris flows, non-cohesive debris flows, and turbidity currents. An examination of the distribution and frequency of these flow events into the basin aid in the understanding of distance from and trajectory of the Central Basin Platform shelf in the early Permian.