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**Patterns of Sedimentation Along a Starved Basin Margin, Permian Brushy Canyon Formation, Southern Delaware Mountains, West Texas**

Brushy Canyon strata in the southern Delaware Mountains occurs 15 km from the southern margin of the Delaware Basin but contains the most distal facies. This 3rd-order fan complex consists of three 4th-order cycles and seven siltstone-bounded, 5th-order sandy fan cycles that collectively thin from 350 m in the central Delaware Mountains to about 200 m in the study area. The architecture, facies and lithology indicate a medial basin floor to fan fringe paleogeography most distant from the sediment source.

Sediment contributions from both the clastic starved southern basin margin and northwestern shelf sediment feeder systems are indicated by northward thinning of carbonate mass transport complexes, and 70m of southwest or lateral thinning from the axis to margin of a 15 square km basin-floor conduit. Southeast paleocurrent data shows the most diverse spread in outcrop. Basin floor facies and architecture are indicated by up to 10 m thick amalgamated sandstone sheets covering a 4-6 square km area best developed in the upper Brushy, a paucity of channelforms and tractive structures, and a high proportion of poorly sorted silty sandstone (inferred to represent distal deposits of high concentration flows). Poorly sorted silty sandstone changes laterally to siltstone to form discontinuous horizons. Discrete fan packages thin and converge reducing their recognition and making larger 4th-order cycles the most recognizable cyclicity within the fan complex. Basinal strata in this setting illustrate the importance of identifying shelf feeder systems over shelf proximity in controlling sandstone architecture.