

# **Pre-Laramide Salt Tectonics in the Eagle Evaporite Basin: A New Paradigm for the Tectonic Evolution of Central Colorado**

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## **ABSTRACT**

Previous work on the tectonic evolution of Central Colorado has dominantly focused on Laramide and younger deformation events, which may overprint a more complex tectonic history. This oversimplification of the tectonic evolution of the region potentially misattributes many large scale structural and stratigraphic features to Laramide shortening, Rio Grande rifting, and Colorado Plateau uplift and erosion. Close examination of extensive Pennsylvanian-aged Eagle Evaporites and overlying Permian- to Jurassic-aged strata exposed in the Eagle Basin indicate a potentially long-lived phase of salt tectonics in the region prior to Laramide deformation. In combination with the rapidly growing understanding of salt tectonics and related growth strata geometries, four key regions of the Eagle Evaporite Basin have been identified to test the following hypotheses through structural and stratigraphic mapping. First, overthickened stratal sequences are remnant of and evidence for Permo-Triassic minibasins, which subsided into mobilized Eagle Evaporites. Second, north-northwest trending linear structures cored by evaporites represent diapir salt walls that grew during Pennsylvanian through Triassic time between minibasins and were welded during subsequent shortening. Lastly, Laramide-related shortening resulting in basinal contraction caused welded salt walls to become reactivated as basement involved thrust structures. This study will foster a new paradigm for the Pennsylvanian through Triassic Evolution of Central Colorado, with significant implications for our current understanding of the timing and magnitude of Laramide-related shortening on the Colorado Plateau. It will also provide a wealth of new field analogs to further characterize the variability and diagnostic features of salt wall systems and their associated depositional minibasins.