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**Variable Expression of Shortening along an Exposed Vertical Salt Weld, La Popa Basin, Mexico**

Both the large-scale geometry and small-scale deformation vary considerably along the 25 km length of La Popa weld, a vertical discontinuity cutting exposed Aptian to Eocene strata in La Popa Basin, Mexico. From northwest to southeast, structures range from: (1) a discrete diapir on a southwest-dipping fold limb, with only local halokinetic deformation; (2) a narrow band of continuous gypsum on a northeast-dipping fold limb, again with minor deformation in adjacent beds; (3) discontinuous blebs of gypsum at the center of a teepee structure, with flanking small-scale structures recording contractional kinematics; (4) a 50 m wide fault zone in the center of a prominent teepee structure, with a strong shear fabric and abundant veins and fractures; and (5) a southeast-plunging anticline cut by right-lateral strike-slip faults.

We suggest that a preexisting salt wall rooted in the Oxfordian Minas Viejas Salt was variably squeezed during the latest Cretaceous through Eocene Hidalgoan orogeny in the foreland of the Sierra Madre Oriental fold-and-thrust belt. The eastern half of the resulting weld accommodated dextral transpression after salt evacuation, whereas the area west of a central bend experienced minor contraction after the salt was mostly evacuated. In contrast, shortening along the western third of the weld was taken up entirely by squeezing of the diapir, so that adjacent strata remain relatively undeformed. The large-scale, non-uniform distribution of shortening structures in the basin was probably controlled by significant thickness differences in the Upper Jurassic to Eocene overburden caused by variable subsidence histories.