

# Sediment fill geometry and structural control of the Pampa del Tamarugal basin, northern Chile

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© 2018 Geological Society of America. Determination of the sediment fill geometry and structure of basins along the western flank of the Central Andes is crucial for understanding the regional tectonic evolution and the geological situation of natural resources. In this study, we developed a sediment-thickness distribution model for the Pampa del Tamarugal basin (between 20°20'S and 21°30'S, northern Chile), from surface geological information, available wells, and interpretation and depth conversion of 14 seismic-reflection profiles. Four Oligocene- Holocene units and one Carboniferous-Eocene undifferentiated basement unit were identified in the seismic profiles. For depth conversion, we established an empirical velocity model using P-wave velocities measured from rock samples, with velocity values from 2 to 6 km/s. By interpolating the basal-fill surface from the processed data set, and subtracting it from the topographic surface, we generated an isopach map of the basin, which has a