

Facies and Thickness Analysis of the Late Middle Jurassic Entrada Sandstone, South-Central Utah: Implications for Depocenter Variation

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A regional-facies analysis of the mud-dominated subtidal/ intertidal/supratidal zones of the late Middle Jurassic Entrada Sandstone in south-central Utah has not been completed in detail. This area has been described in the literature as the “earthy facies” or “sabkha” environment. The locations of study are on the east and west flanks of the San Rafael Swell and in the Escalante, Utah area. We interpret the facies of this region to be primarily a large, broad, tidal flat with associated supratidal sabkha and erg-margin rocks. The relatively deepest water facies was located at the eastern San Rafael Swell and the relatively shallowest facies in the south near Escalante. The thickness of the Entrada Sandstone increases from the eastern San Rafael Swell to the western San Rafael Swell and thickens even more to the south in the Escalante region. This indicates that the depocenter during Entrada time was largely in the south near Escalante with less deposition occurring in the northern area.

The three sections, which span a distance of 193 km, experienced different influences of sediment supply and subsidence which may have been determined by the relative distance from the Jurassic Western Cordillera. Numerous exposure surfaces are found in all sections but their regional extent is unknown given the lack of absolute age control and field coverage. Sequence stratigraphic correlation does not appear plausible until dating of candidate ash beds has been completed as part of our future research.