

DRYLAND FLUVIAL SYSTEMS: FACIES ANALYSIS AND SEQUENTIALITY OF THE SERRA DA GALGA MEMBER AT THE “PONTO 1 DO PRICE” (PEIRÓPOLIS-MG, BAURU BASIN)

Soares, M.V.T¹; Basilici, G.^{1,2}; Marinho, T.S.³; Araujo, T.P.¹

¹Universidade Estadual de Campinas - UNICAMP; ²CRILAR/CONICET, Argentina; ³Universidade Federal do Triângulo Mineiro - UFTM

ABSTRACT: The Serra da Galga Member (Upper Cretaceous) occurs restricted to the northeastern margin of the Bauru Basin and crops out in the Triângulo Mineiro (Minas Gerais State) along several acknowledged geosites, vastly mentioned in the palaeontological literature for its rich vertebrate fauna, where the so called “Ponto 1 do Price”, also referred as the “Caieira site”, acts as one of the most representative and well exposed outcrops of the member. Sedimentological studies from this location have been carried out under a basin scale stratigraphical analysis, with detailed sedimentological studies been so far neglected. Under the optics of regional studies, this member has been classified as the intermediate to distal part of an alluvial fan. However, at the study site, the member reveals several sedimentological evidences pointing out towards a more complex and variable channelized system. As a mean for unraveling the inherent complexities presented by the member at the study site, a high resolution sedimentological study was here conducted. Thereby, the outcrop was analyzed through high resolution facies architecture and stratigraphic framework reconstruction. Ten lithofacies were identified and classified as: (a) carbonate cemented conglomerate, (b) intraformational conglomerate, (c) gravel lags, (d) green colored conglomeratic sandstone, (e) carbonate cemented sandstone, (f) carbonate cemented sandstone with intraclasts, (g) fine-grained sandstone, (h) muddy sandstone, (i) bioturbated mudstone and (j) paleosol. The lithofacies were organized in seven architectural elements related to channel and floodplain deposits. Channel deposits are identified by the following elements: (i) hyperconcentrated flow deposits, (ii) gravel bedforms, (iii) sandy bedforms, (iv) fluvial bars and (v) hollows. Floodplain deposits by: (i) abandoned channels and (ii) floodplain fines. The reconstruction of the stratigraphic framework established six sedimentary sequences, bounded by erosive and paleopedogenetic surfaces. As a result, the Serra da Galga Member revealed, at the study site, a complex braided fluvial system developed under semiarid conditions with variable water discharge in a proximal zone where deposition was controlled by autogenic processes, marked by recurrent avulsion episodes with pauses on the sedimentation as evidenced by soil development. A final stratigraphic framework was achieved, unraveling a series of alternating processes between in-channel and floodplain sedimentation, occasionally interrupted by changes in river path and surface stabilization.

KEYWORDS: FACIES ARCHITECTURE, DRYLAND FLUVIAL SYSTEMS, SERRA DA GALGA MEMBER