

ABSTRACT
SEQUENCE STRATIGRAPHY, SEDIMENTOLOGY AND PROVENANCE OF
THE DRIP TANK MEMBER, STRAIGHT CLIFFS FORMATION,
KAIPAROWITS PLATEAU, SOUTHWESTERN UTAH

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Las Cruces, New Mexico, 2005
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The Drip Tank Member of the Straight Cliffs Formation located in the Kaiparowits Plateau of southwestern Utah is an amalgamated stacked braided-fluvial system. The Drip Tank Member was initially described as a mappable lithostratigraphic unit; however, the Drip Tank Member does not represent a single genetic package of strata. At its uppermost extent, the Drip Tank Member is capped by a laterally discontinuous dark orange quartzolithic valley fill sandstone. Dividing this dark orange sandstone from the underlying sandstone is an erosional surface which truncates a minimum of 8 meters of the underlying sandstone and represents a by-pass surface and sequence boundary. A combination of composition and paleocurrent indicators records mixing of detritus in a foreland basin by a fluvial system that flowed primarily from the south and west and evolved to an eastward flowing system in the upper part of the Drip Tank Member. Accompanying this shift was a decrease in feldspar content. Limited fossil and palynomorph data, combined with the presence of an unconformity represented by a sequence boundary near the top of the Drip Tank Member, suggest a probable latest Santonian age. Although previous models place the amalgamated facies tract entirely above the sequence boundary, in the Kaiparowits Plateau the Drip Tank Member includes the highstand systems tract, a sequence boundary, and the overlying lowstand or transgressive systems tract. Paleocurrent indicators record an initially underfilled basin that evolved to an overfilled basin in the Henrieville and Kaiparowits basins. The Drip Tank Member most closely fits the tectonic thrust-propagation model for the filling of the basin.