Triassic-Jurassic Deposition in the Clarence-Moreton Basin, Springfield Lakes, Queensland, Australia

Maria Brunhart-Lupo
Colorado School of Mines, Golden, CO.

The Clarence-Moreton Basin, located in southeast Queensland and northeast New South Wales, is a significant potential resource for petroleum and gas in Australia. The basin consists of Late Triassic to Late Jurassic aged units of fluvial and lacustrine siliciclastics and coal with minor basaltic volcanics. These sediments were deposited when the Clarence-Moreton Basin was located at approximately 60 degrees south latitude.

The Ripley Road Sandstone and the Raceview Formation are part of the Woogaroo Subgroup within the Clarence-Moreton Basin. The characteristics and structure within the Ripley Road Sandstone and the Raceview Formation are key to understanding the depositional environment of the units which may affect the interpretation for resource evaluations. Fortunately, these formations outcrop in road cuts along the Springfield-Greenbank Arterial, outside the suburb of Springfield Lakes, south of Camira, Queensland. While this location lies just outside of the Clarence-Moreton Basin, the outcrops provide an opportunity to allow detailed study of the formations over a broad area.

This paper discusses the depositional environment and conditions leading to the deposition of the Ripley Road Sandstone and the Raceview Formations. The Ripley Road Sandstone contains characteristics that are typical for a braided stream deposit. Although the outcrop has been affected by near-surface weathering, the unit contains good reservoir properties. The Raceview Formation, which lies unconformably beneath the Ripley Road Sandstone, has characteristics that are similar to that of a meandering stream, which may be affected by a downstream estuarine environment. Avulsion of a main river system may have led to the Ripley Road Sandstone being deposited on the Raceview Formation. These findings provide important information on the lateral extent, continuity, and properties of the Ripley Road Sandstone and Raceview Formation outside of the Clarence-Moreton Basin and can be used to refine the current understanding for the development of petroleum and coal resources in the basin.