Stratigraphic Correlations of the Colorado Group in Saskatchewan

Melinda Yurkowski *
Saskatchewan Ministry of Energy and Resources, Regina, Saskatchewan
melinda.yurkowski@gov.sk.ca
and
Dr. J.E. Christopher
Geological Consultant, Regina, Saskatchewan

The Albian to Santonian Colorado Group sediments of Saskatchewan were deposited on a shelf that lay between the Rocky Mountain Foreland Basin to the west and the Williston Basin to the south and southeast along the international border. The shelf extended an unknown distance north and northeast beyond the Cenozoic erosional edge into central Saskatchewan and Manitoba. These depositional centers influenced sedimentation within the Colorado Group in Saskatchewan asymmetrically, but the shelf itself had extremely low depositional gradients.

The Colorado Group in Saskatchewan is volumetrically dominated by mudstones, shales and marlstones, but also contains significant sand intervals. Much research has been done on the hydrocarbon bearing sandstones, such as the Viking Formation, Medicine Hat Member and Second White Speckled Shale, and to a lesser degree on the Newcastle and St Walburg formations. Less is known about their distal correlative surfaces and the shales that encompass these beds, or the unconformities that affect the correlations.

As part of an ongoing study of the stratigraphy of the Colorado Group in Saskatchewan cores taken from mineral drill holes, as well as cores from select oil and gas wells, are being examined. The core study, in association with detailed province wide stratigraphic geophysical well log correlations have revealed regional Colorado Group stratigraphic relationships to be more complex than previously considered.