



Update on Northwest Saskatchewan's Lower Cretaceous Dina Formation

Bitumen Play

Dan Kohlruss

Saskatchewan Ministry of Energy and Resources, Regina, Saskatchewan

dkohlruss@ir.gov.sk.ca

and

Per Kent Pedersen

University of Calgary, Calgary, Alberta

and

Guoxiang Chi

University of Regina, Regina, Saskatchewan

Abstract

On going interest in Northwest Saskatchewan's Lower Cretaceous Dina Formation Bitumen play has resulted in continued drilling and coring of 128 new stratigraphy test wells drilled from April 2007 to March 2008. These new wells and cores have been integrated to update our maps of the limits of bitumen emplacement as well as further delineate channels confined within the paleotopographic erosional lows of the Devonian Elk Point Group. The new wells have also given insight into the extent of Quaternary erosion of the bitumen-bearing Dina Formation and subsequently deposited water-bearing Quaternary clastic sediments in direct communication with the Dina Formation.

Our research has shown the clastic sediments of the Mannville Dina Formation (McMurray Formation equivalent) in northwest Saskatchewan to be comprised of fluvial sandstones and conglomerates often forming fining upward successions. The fluvial deposits of the Dina Formation also tend to occur as two distinct depositional facies, either as high angle tabular cross-bedding or as low angle trough cross-bedding, both of which exhibit a distinct lack of bioturbation. The Dina Formation is generally characterized by extremely high porosities, up to 35%, along with very good to excellent bitumen saturation.

Updates on previous detailed mapping of the known bitumen deposit and its limits have been accomplished through correlation of cores, core analysis and geophysical well logs, thus producing a stratigraphic framework for Northwest Saskatchewan and has subsequently been correlated with wells in the province of Alberta.