

## **A Regional Assessment of the Duvernay Formation; a World- Class Liquids-Rich Shale Play**

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### **Abstract**

The Duvernay Formation sourced the beginnings of Alberta's mid-20th century oil boom with conventional Leduc discoveries near Leduc, Alberta. In the early 21st century, the Duvernay Fm once again spurs exploration and development activity; yet in an unconventional way by targeting the source rock itself in the Kaybob and Willesden Green areas of Alberta.

Exploitation of the world-class, liquids-rich potential of the Duvernay shale requires an integrated approach utilizing classic and avant guard technologies in shale reservoir research. Sweet spot identification began with an understanding of the key input parameters for shale pay identification followed by regional stratigraphic mapping covering over 56,000 square kilometres of the Duvernay shale fairway. The organic-rich Duvernay Formation was deposited within an interior seaway in upper Devonian time; covering a large portion of the western Canadian sedimentary basin. Net shale isopachs within the play area, for the most part, range between 25 and 60 metres; however, over 90 meters thickness has been identified. Regionally, the Duvernay is silica rich, low in clay, with a variable carbonate content, minor pyrite and dolomite; comparing favorably to other unconventional shale reservoirs that have been successfully fracture stimulated.