

Hydrogeology of the Bakken Formation

Saskatchewan & Eastern Montana

Introduction

The unconventional Bakken Play is now well-established in North Dakota, Saskatchewan and in the Elm Coulee area of eastern Montana. At the recent RMAG and PTAC Fall Symposium on the Bakken, Steve Sonnenberg, of the Colorado School of Mines, identified a new play northeast of Elm Coulee and southeast of the Brockton Froid Fault System. Preliminary reports of success indicate initial production rates of 369 to 2,962 boepd from wells that are characterized by higher water cuts than in other producing areas. He described the area as a zone of high heat flow and slight overpressuring.

Northwest of the Brockton Froid Fault System, the Upper Middle Bakken (sandstone) tends to be thicker and more porous with reservoir pressures that are more normal. This seems to indicate an area of conventional plays. However, this region is still in close proximity to the area of mature Bakken source rocks, and variations in the distribution of Bakken facies, specifically the Upper Middle Bakken sandstone and Lower Middle Bakken siltstone, may create the setting for a regional stratigraphic trap similar to the Viewfield and Taylorton areas in Saskatchewan. This is also an area of extensive salt solution and tectonic movements that may have created structural traps in the Bakken.

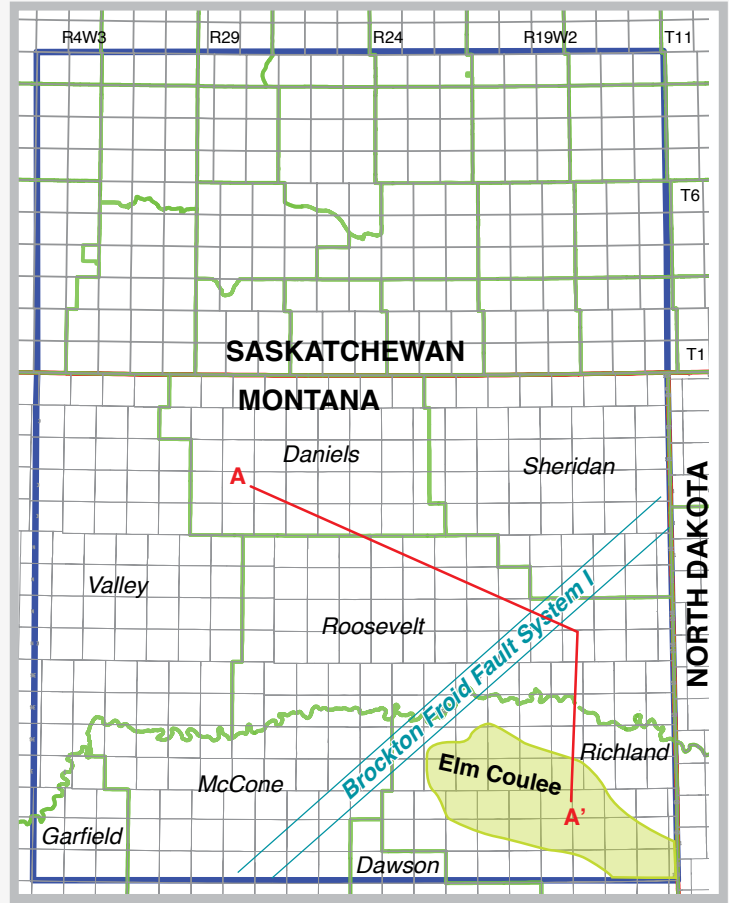
Proposed Study

To answer some of the questions surrounding the new activity in Montana, and to investigate the potential of the Bakken northwest of the Brockton Froid Fault Zone, Canadian Discovery Ltd. (CDL) is proposing a new hydrogeological study of the area. This work will encompass data from Saskatchewan and Montana and will be an extension of the hydrogeological models developed by CDL and its previous extensive work in North Dakota and Saskatchewan.

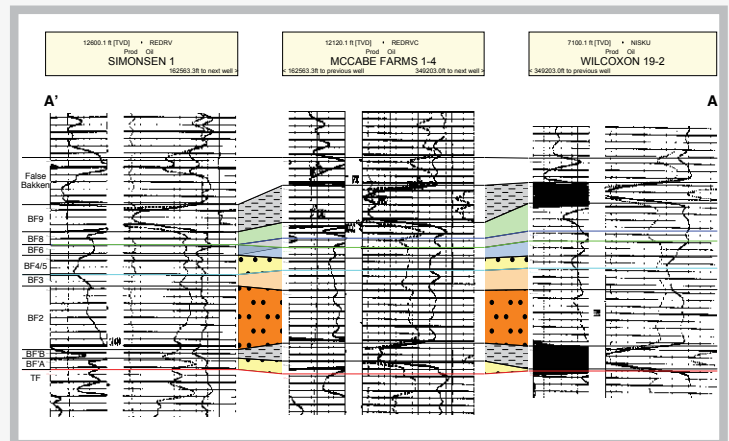
Deliverables

- » Pressure Versus Elevation Graph
- » Facies Isopach Maps
- » Hydraulic Head Map
- » Formation Water TDS Map
- » Hydraulic Systems and Project Summary Map

In addition, a report will be provided outlining the methods used and the results of the study. *Note: Pricing and delivery TBA*



Study Area



Elm Coulee Cross-Section

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