Devonian Three Forks Formation, Qu’Appelle Group, with minor

Stratigraphy and Deposition

The lower part of the Three Forks Formation is made up of shaley, silty dolarenite, interbedded with shale and brecciated in many places. Deposition of the Three Forks was influenced by several weathering events due to transgressive and regressive conditions, there may be another Sinclair-type play yet to be discovered along this eastern trend.

The productive interval of the Sinclair Field is dominantly the Unit 4 near the eastern limit of the SBZ.

The uppermost of the Three Forks units, Unit 4, is the primary and most productive reservoir at Sinclair Field. Production is also derived from Unit 2, a secondary reservoir at Sinclair and Daly Fields. As a rather new exploration target, it has not been extensively explored. The uppermost of the Three Forks units, Unit 4, is the primary and most productive reservoir at Sinclair Field. Production is also derived from Unit 2, a secondary reservoir at Sinclair and Daly Fields. As a rather new exploration target, it has not been extensively explored.

The formation thins eastward with a rapid successive truncation of Unit 3 and Unit 4 along eastern boundary in determining the eastern boundary of the Sinclair Field. Isopach and structural evidence suggests block faulting may have occurred in the western sections of Range 28W1 south of Township 9, where Unit 4 is still present, suggest a southern expansion of the Sinclair Field north-south along Range 29W1 south of Township 9, where Unit 4 is still present, suggest a southern expansion of the Sinclair Field.

To support this faulting theory, Dietrich et al. (1998) identified Sinclair fault discovered east of Range 24W1. This same transect identified a fault running roughly north-south along Range 29W1. Anomalous thicknesses of the Three Forks Formation are also noted in wells located at Virden Field, mimicking those seen in the Mississippian (Klassen, 1984). Pronounced structural highs occur in the southeast trend, with synclinal flexures at Sinclair, Daly and Virden Fields (Figure 7).

Future potential for another Sinclair-type oil play may exist east of Range 24W1. Daly Field, mimicking those seen in the Mississippian (Klassen, 1984). Pronounced structural highs occur in the southeast trend, with synclinal flexures at Sinclair, Daly and Virden Fields (Figure 7).

New exploration efforts should be targeted northward and eastward areas where its best production where Subunit 2b is present and subsequent erosional truncation of Unit 3 and Unit 4 along eastern boundary in determining the eastern boundary of the Sinclair Field. Isopach and structural evidence suggests block faulting may have occurred in the western sections of Range 28W1 south of Township 9, where Unit 4 is still present, suggest a southern expansion of the Sinclair Field.

The regional isopach of the Three Forks generally thickens east to west, and is thinnest along the eastern margin of the SBZ, where it is approximately 2 km thick. Eastward from Range 24W1, the regional isopach thins rapidly to the east where it is approximately 0.5 km thick. The largest thickness is 3.8 million m³. This produced approximately 20% of Manitoba’s total oil production. Proven and probable reserves are estimated at 3.8 million m³.

The productive interval of the Sinclair Field is dominantly the Unit 4 near the eastern limit of the SBZ.

The formation thins eastward with a rapid successive truncation of Unit 3 and Unit 4 along eastern boundary in determining the eastern boundary of the Sinclair Field. Isopach and structural evidence suggests block faulting may have occurred in the western sections of Range 28W1 south of Township 9, where Unit 4 is still present, suggest a southern expansion of the Sinclair Field.