

West Central AB: Cardium

Summary

The Cardium represents a complex clastic pulse that alternated between sandy and muddy stages during the period of maximum inundation of the Mesozoic North American foreland basin. The formation is of significant economic interest because it possesses a colossal hydrocarbon storage capacity in a series of stratigraphic traps, the largest of which is the supergiant Pembina Field (Nielsen and Porter, 1984; Krause et al., 1987). The economic importance of the Cardium has only increased with the introduction of horizontal drilling and completion technology, which now brings the tight portion of the zone into the realm of economic interest.

The Pembina River Member includes the informal Cardium "A" and "B" sandstones used by industry to designate, respectively, an upper and a lower producing zone. The Pembina River Member consists of one or more coarsening-upward sequences that grade from shales to sandstones and then to variably thick conglomerates. The Cardium Zone Member also comprises coarsening-upward sequences, but in contrast to the Pembina River Member, it is predominantly shale with lesser amounts of fine-grained sandstone and conglomerate (Krause et al., 1994)

Play Synopsis

Fluid	Oil, 38.1 API
Pay Thickness	4.5m
Rf(Primary)	8%
Fm. Temp.	52°C
Active operators	Yangarra, Bonavista, Prairie Storm
Completions	Multi-stage Fracturing
Depth	1560m to 1920m
Lithology	Shoreface sands/Conglomerates
Average Porosity	12%
Water Saturation	15%
Type Well EUR	76 mboe
Type Well IP90	133 boed

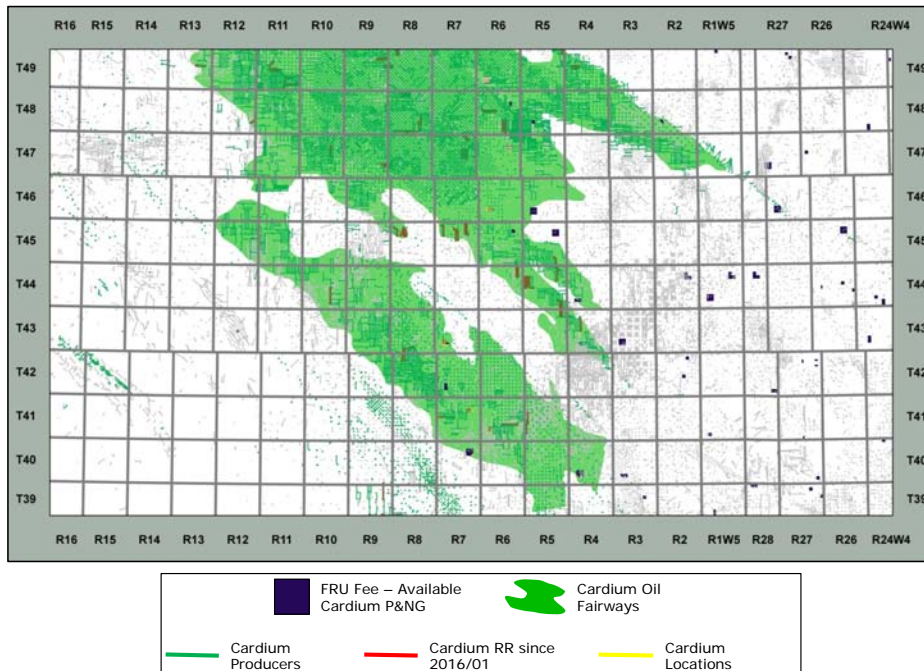
Capital Costs

DCE&(SWB): \$2625M

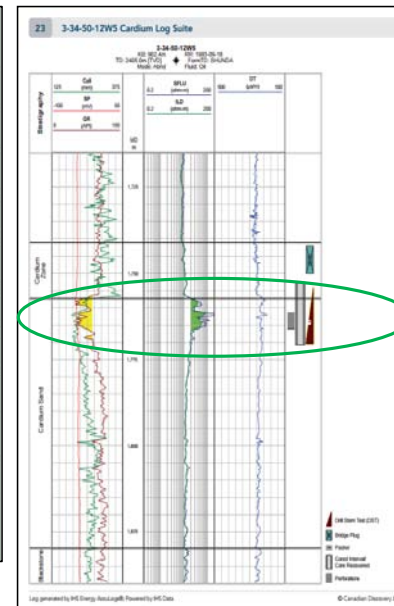
With 20% Lessor Royalty

IRR BT: 6%
Payout: 7.1 years
F&D: \$34.34/boe
Netback (IP 90): \$40.35/boe
Recycle Ratio: 1.2

Cardium Oil Pay Fairway Map



Offset Well Log



Type Curve Analysis

