Revised Nordegg Member Subsurface to Surface
Correlations Based on Detailed Core Descriptions,
Regional Cross-Sections and New Ammonite Data

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The Lower Jurassic Nordegg Member is the richest hydrocarbon source rock of
the Western Canada Sedimentary Basin with total organic carbon values
commonly in excess of 10 weight percent. It is also an important subsurface
stratigraphic marker by virtue of its regional extent and generally high gamma-ray
géophysicale log response.

The Nordegg Member has no type locality and its age has been called into
question. It displays marked changes in thickness and lithology across the
Western Canada Sedimentary Basin. In the subsurface of west-central Alberta, it
is commonly a dark grey to black, organic-rich phosphatic lime mudstone.
Despite the Nordegg Member's distinctive log response, subsurface facies
changes and the presence of two carbonate "ramps" are poorly documented. In
surface exposures, the Nordegg Member is commonly a cherty carbonate.
Correlations between surface and subsurface stratigraphy are tenuous, hindered
by the aforementioned lithological differences and a lack of biostratigraphic data.

Newly discovered ammonites within Nordegg Member drill-core range in age
from Hettangian to Middle Toarcian. Lithological changes, exposure surfaces and
revised geophysical log cross-sections have been used to divide the subsurface
Nordegg Member into informal units. Based on their lithology and age, the
subsurface Nordegg Member units are equivalent to surface exposures of
unnamed Lower Jurassic shales, Nordegg Member cherty carbonates, the Red
Deer Member and the Poker Chip Shale.