Stratigraphic Correlations for Six Wells in the Adgo Oil and Gas Field, Beaufort-Mackenzie Basin, Arctic Canada

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Abstract

A significant oil and gas field occurs in Tertiary strata in the Adgo structure in the west-central Beaufort-Mackenzie Basin (Fig. 1). New stratigraphic correlations are presented here for the six wells drilled in the field: Adgo H-29, F-28, J-27, P-25, C-15 and G-24. The stratigraphic interpretations are based on an integrated study of seismic and well log data and biostratigraphic information (McNeil, 1997). A well log cross-section (Figure 2) outlines the major sequence-stratigraphic correlations across the field. These correlations differ significantly from previous work (Dixon, 1995).

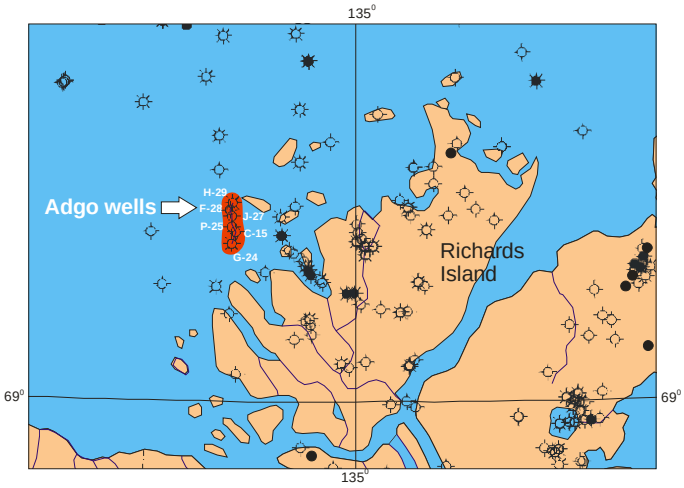

Figure 1: Location of Adgo wells, Beaufort-Mackenzie Basin.

The Adgo wells penetrated Pleistocene to Early Eocene strata in five major unconformity-bounded sequences: Iperk, Mackenzie Bay, Kugmallit, Richards, and Taglu. Four Adgo wells (H-29, F-28, J-27 and P-25) penetrated strata in the Late Paleocene-Early Eocene Aklak Sequence. The Oligocene Kugmallit Sequence varies in thickness from less than 200 m in most of the Adgo wells to over 350 m in the two southern wells (G-24 and C-15). The Late Eocene Richards sequence varies in thickness from

450 to 650 m. The Early-Middle Eocene Taglu Sequence is up to 1700 m thick in the Adgo H-29 well, which penetrated the entire sequence. The Aklak Sequence in the F-28, J-27 and P-25 wells varies in thickness from 400 to 650 m, with only the upper part of the sequence penetrated.

An important observation in this new stratigraphic framework is that many of the hydrocarbon zones in the Adgo field occur in Richards sequence deltaic strata, and not solely Taglu strata as previously described. This interpretation may provide new insights into basin depositional patterns and reservoir potential.

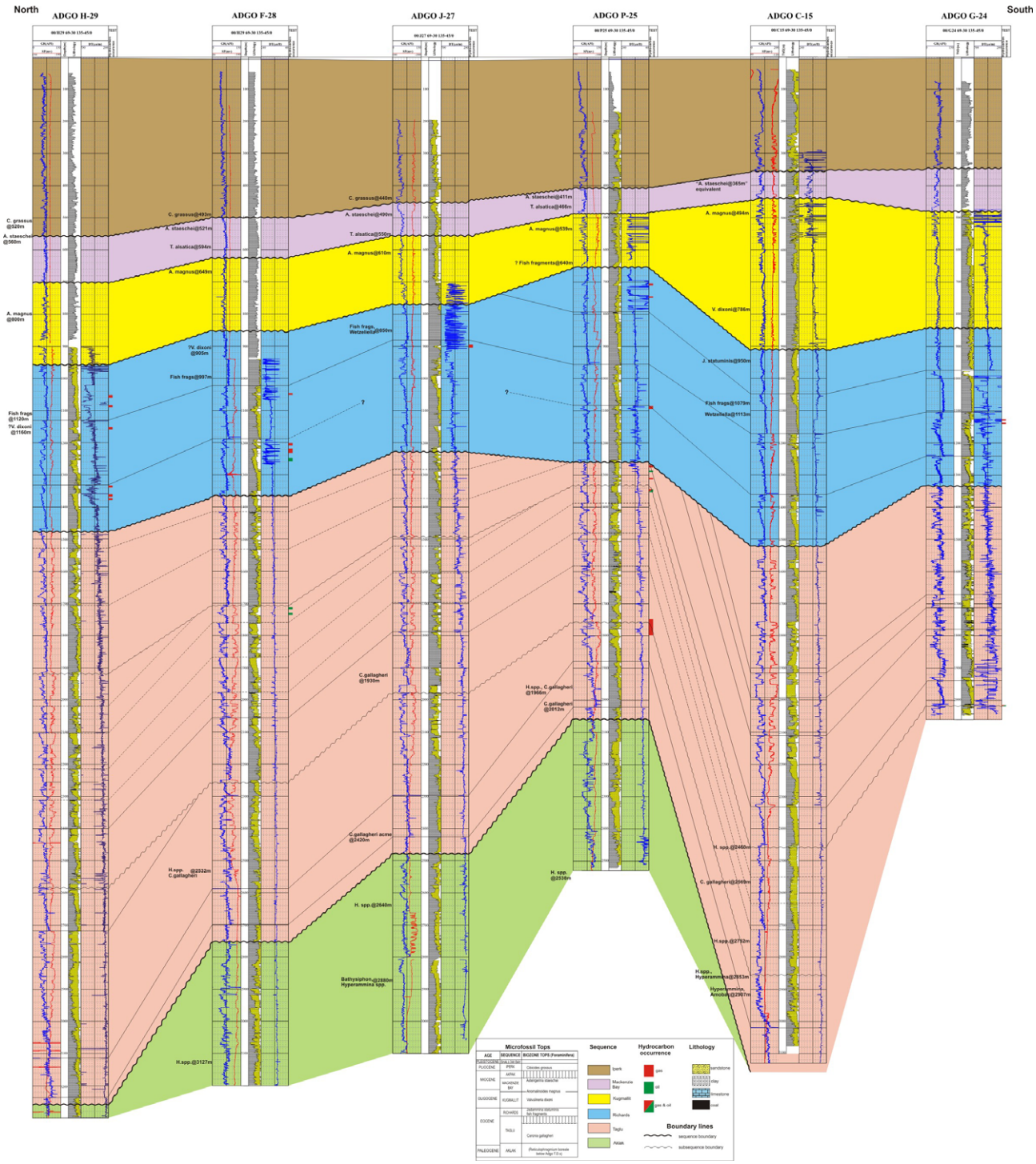

Figure 2: Well log cross-section illustrating Tertiary sequence correlations and tested hydrocarbon zones in the Adgo field.

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References

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McNeil, D.H., 1997. New foraminifera from the Upper Cretaceous and Cenozoic of the Beaufort-Mackenzie Basin of Arctic Canada. Cushman Foundation for Foraminiferal Research, Special Publication No. 35, 95 p.