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GEOLOGICAL SURVEY OF CANADA | COMMISSION GÉOLOGIQUE DU CANADA

SECTION A

Northwest — BEAVERHOUSE CREEK H-13 — AKLAVIK A-37 — AKLAVIK F-38 — AKLAVIK F-17 — Southeast

300/ H13 68-30 135-30 /0
KB = 245.00 ft

300/ A37 68-20 135-00 /0
KB = 33.14 ft

300/ F38 68-10 135-00 /0
KB = 40.03 ft

300/ F17 68-10 135-00 /0
KB = 26.90 ft

Depth Ft-KB | GAM API UNITS 0–150 | DT usec/ft 140–40

Sea level

Mount Goodenough Fm

Parsons Gp: Kamik; McGuire; Martin Creek

Husky Fm: Upper Mbr; Lower Mbr

Bug Creek Gp

Permian: Longstick Fm; Jungle Creek Fm

Road River Gp

Ronning Gp

Quaternary

Arctic Red Fm

Martin House Fm

Rat River Fm or Upper Mbr of Mount Goodenough Fm

Casing Point

Red/green shales

?

KUGMALLIT TROUGH

ESKIMO LAKES UPLIFT

ESKIMO LAKES FAULT ZONE

Red beds

Interbedded limestone and shale, some chert

Permian palynomorphs in core (GSC Paleontology Report. G-JU-1989)

Givetian palynomorphs (GSC Paleontology Report PS202)

Red-beds

Webbinelloidea - possibly M.Devonian (GSC Paleontology Report PS202)

Interbedded limestone, dolostone, shale and cherty shale

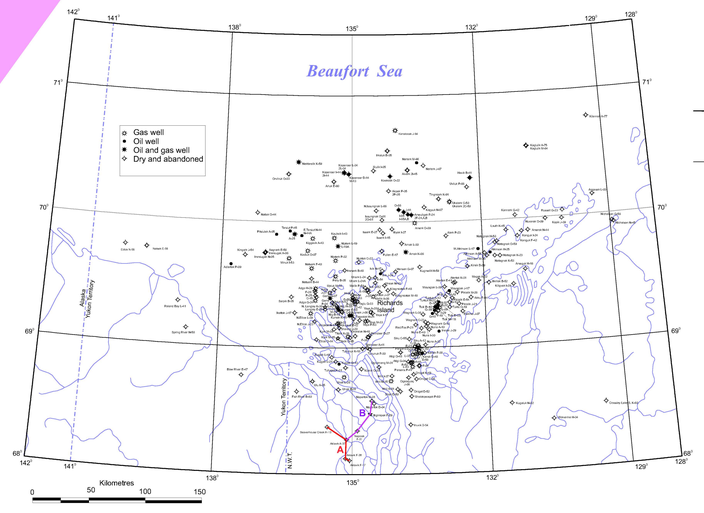
Interbedded limestone, dolostone and shale

Dolostone with thin shale interbeds

?Niagaran fossils

WESTERN END OF KUGMALLIT TROUGH

NORTHEAST FLANK OF RAT UPLIFT



SECTION B

Southwest — AKLAVIK A-37 — NAPOIAK F-31 — ITIGINKPAK F-29 — NAPARTOK M-01 — Northeast

300/ A37 68-20 135-00 /0
KB = 33.14 ft

300/ F31 68-30 134-45 /0
KB = 43.00 ft

DEVON ET AL ITIGINKPAK F-29
KB = 9.52 m

300/ M01 68-40 134-30 /0
KB = 15.80 m

Depth Ft-KB / Depth M-KB | GAM API UNITS 0–150 | DT usec/ft 140–40 | GR API UNITS 0–150 | DT4P 120.0 µS/M 61.0 µS/M 0.00

Sea level

?Tertiary and/or Quaternary

Arctic Red Fm

Martin House Fm

Rat River Fm or Upper Mbr of Mt Goodenough Fm

Mount Goodenough Fm

Parsons Gp: Kamik; McGuire; Martin Creek

Husky Fm: Upper Mbr; Lower Mbr

Bug Creek Gp

Permian

Paleozoic

Casing Point

?

Permian palynomorphs in core

Mesodvian microflora in core

Carboniferous

?Ronning Gp

Webbinelloidea - possibly M.Devonian (GSC Paleontology Report PS202)

Interbedded limestone, dolostone and shale

NAPOIAK HIGH

NOTES

The two cross sections (A and B) illustrate stratigraphic correlations between seven wells from the southernmost part of the Mackenzie Delta. Eight wells have been drilled in this area of the Delta: Aklavik A-37, F-17, and F-38, Napartok M-01 and D-04, Napoiak F-31, Itiginkpak F-29, and Beaverhouse Creek H-13, although at the time of writing this report Napartok D-04 was not available for public viewing. These wells are situated at the southwest end of the predominantly Mesozoic Kugmallit Trough and straddle the Eskimo Lakes Fault Zone. The Aklavik A-37 and F-38, Beaverhouse Creek H-13, Napoiak F-31, Napartok M-01 and D-04, and the Itiginkpak F-29 wells are within the trough, and Aklavik F-17 sits on the Eskimo Lakes Uplift. Beaverhouse Creek H-13 also lies on the northeast flank of Rat Uplift and is separated from the Aklavik A-37 well by the Donna River Fault Zone. None of the wells tested hydrocarbons, nor were there any indications for the presence of hydrocarbons.

The correlations illustrate the preservation of Mesozoic strata in the Trough and erosion on the Eskimo Lakes and Rat uplifts, especially at the sub-mount Goodenough unconformity (Section A). Section B also illustrates the northeastward thinning of the Jurassic Bug Creek Group, some of which is depositional but also through erosion at an intra-Bug Creek unconformity (Poulton et al., 1982). Thinning of Mesozoic strata in the Napoiak well (Section B) reflects a minor positive element within the Kugmallit Trough, abutting the Eskimo Lakes Fault Zone, the Napoiak High (Dixon, 1982).

Paleozoic stratigraphy is less well known but the northeastward progressive truncation to deeper stratigraphic levels is apparent on Section B.

Mesozoic, Permian, and Upper Devonian strata are siliciclastic, whereas Middle Devonian and older Paleozoic strata are predominantly carbonates. Carboniferous strata tend to be a mixture of carbonates and siliciclastics.

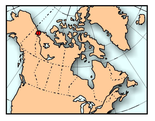
References

Dixon, J., 1982. Jurassic and lower Cretaceous subsurface stratigraphy of the Mackenzie Delta – Tuktoyaktuk Peninsula, N.W.T.; Geological Survey of Canada, Bulletin 349, 52 p.

Poulton, T.P., Leskiw, K., and Audretsch, A., 1982. Stratigraphy and microfossils of the Jurassic Bug Creek Group of northern Richardson Mountains, northern Yukon and adjacent Northwest Territories; Geological Survey of Canada, Bulletin 325, 137 p.

OPEN FILE 6617: CORRELATIONS BETWEEN WELLS IN THE SOUTHERNMOST PART OF MACKENZIE DELTA, NORTHWEST TERRITORIES (Sonic and Gamma-ray logs).

J. Dixon



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DOSSIER PUBLIC
6617
GEOLOGICAL SURVEY OF CANADA
COMMISSION GÉOLOGIQUE DU CANADA
2010

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Recommended citation:
Dixon, J., 2010. Correlations between wells in the southernmost part of Mackenzie Delta, Northwest Territories (sonic and gamma-ray logs); Geological Survey of Canada, Open File 6617, Poster.

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