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GEOLOGICAL SURVEY OF CANADA | COMMISSION GÉOLOGIQUE DU CANADA

OPEN FILE 5441

BEDROCK GEOLOGY COMPILATION AND REGIONAL SYNTHESIS OF PARTS OF THE HEARNE AND RAE DOMAINS

WESTERN CHURCHILL PROVINCE

NUNAVUT–MANITOBA

Scale 1:550 000/Échelle 1/550 000

Kilometres 0 5 10 0 5 10 20 30 40 Kilomètres

Universal Transverse Mercator Projection
North American Datum 1983
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Projection transverse universelle de Mercator
Système de référence géodésique nord-américain, 1983
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Southeastern Rae

Northwestern Hearne

Northern Rae

Southern Hearne

Central Hearne

Thelon Tectonic Zone

Snowbird Tectonic Zone

Driftwood Tectonic Zone

Wathaman Batholith

Virgin River Shear Zone

Tabbernor Fault

Taltheilei Shear Zone

Tantato Domain

Ennadai Complex

Rae Domain

Hearne Domain

HUDSON BAY | BAIE D'HUDSON

NUNAVUT | MANITOBA

Area of compilation

Anthean Supracrustal Rocks
- Baralzon Belt (BB), and other mafic volcanics (Rae Domain)
- Prince Albert Group (PAG), Kasba Lake Group (KLG), Murmac Bay Group (MBG)
- Hearne Domain Granodiorite-Metasedimentary Belts

Paleoproterozoic Supracrustal Rocks
- Baker Lake (BL), Thelon (TH), Athabasca (ATH)
- Pacofton Group (P), Piling Group (PG), Chantey Belt (CB), Amer Group (A), Corruption Supergroup (Cag)

Phanerozoic Cover
- TVG accretionary orogen: Taltheilei Shear Zone, volcanic units (Rae/Hearne zone); Granulite-Anorthosite-Gabbro Belt
- Rae Domain
- Potential Rae Domain
- Hearne Domain
- Undifferentiated Archean Cratons

Hudson Suite
- Ford Lake magmatic suite and other suites (FMS)
- Wathaman Batholith (WB, 1.86–1.87 Ga); Cumberland Batholith (CB, ~1.83–1.87 Ga)
- Granite magmatic suite (1.715 Ga)

Shear zone / fault
Thrust

Figure 1. Sketch map showing the distribution of major Archean and Paleoproterozoic supracrustal belts, granitoid and granulite complexes, shear zones, and the extent of the bedrock geology compilation.

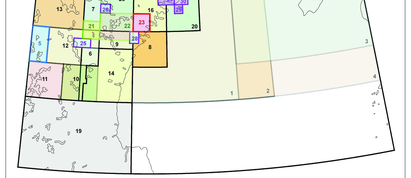

Figure 2. Sources used in comprising the 1:500 000 scale bedrock geology of parts of the Hearne and Rae domains, Nunavut and Manitoba. Boxes are keyed to the listed references below.

1:1 000 000 scale

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1:500 000 scale

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1:250 000 scale

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12. Eade, K.E. 1974: Geology, Kognak River; District of Keewatin, Northwest Territories; Geological Survey of Canada, Map 1394A, scale 1:250 000.

13. Eade, K.E. 1985: Geology, Tulemalu Lake–Yathkyed Lake area, District of Keewatin, Northwest Territories; Geological Survey of Canada, Map 1634A, scale 1:250 000.

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1:125 000 scale

21. Tella, S., Sanderson, H.A., Rainbird, R.H., Peterson, T.D., Ryan, J.J., and Goff, S.P. 1999: Geology, Hearne Lake–Kaguq River area, Kivalliq Region, Nunavut; Geological Survey of Canada, Open File 3648, scale 1:125 000.

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1:100 000 scale

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M-T MODEL
(after Jones et al., 2002)

SE-NW Geophysical Transect

< sites

Resistivity model of the Magnetotelluric (MT) data (MOHO depth ~ 40 km)

Two possible end-member Interpretations

< sites

Conducting material is footwall Rae domain/crust; STZ is along the Chesterfield Inlet

< sites

Conducting material is hanging wall Hearne domain/crust; STZ between the two; Detachment at the MOHO with ~ 100 km translation of Rae mantle lithosphere beneath Hearne crust

Figure 3. Magnetotelluric and Teleseismic transect (M-T model, after Jones et. al., 2002) across a portion of the Hearne domain. The SE-NW trending geophysical transect line is shown as a solid line on the map (sheet 1). The data collection sites are referenced as 001 through to 008. Sites 1 to 4 are within the area of map compilation.

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