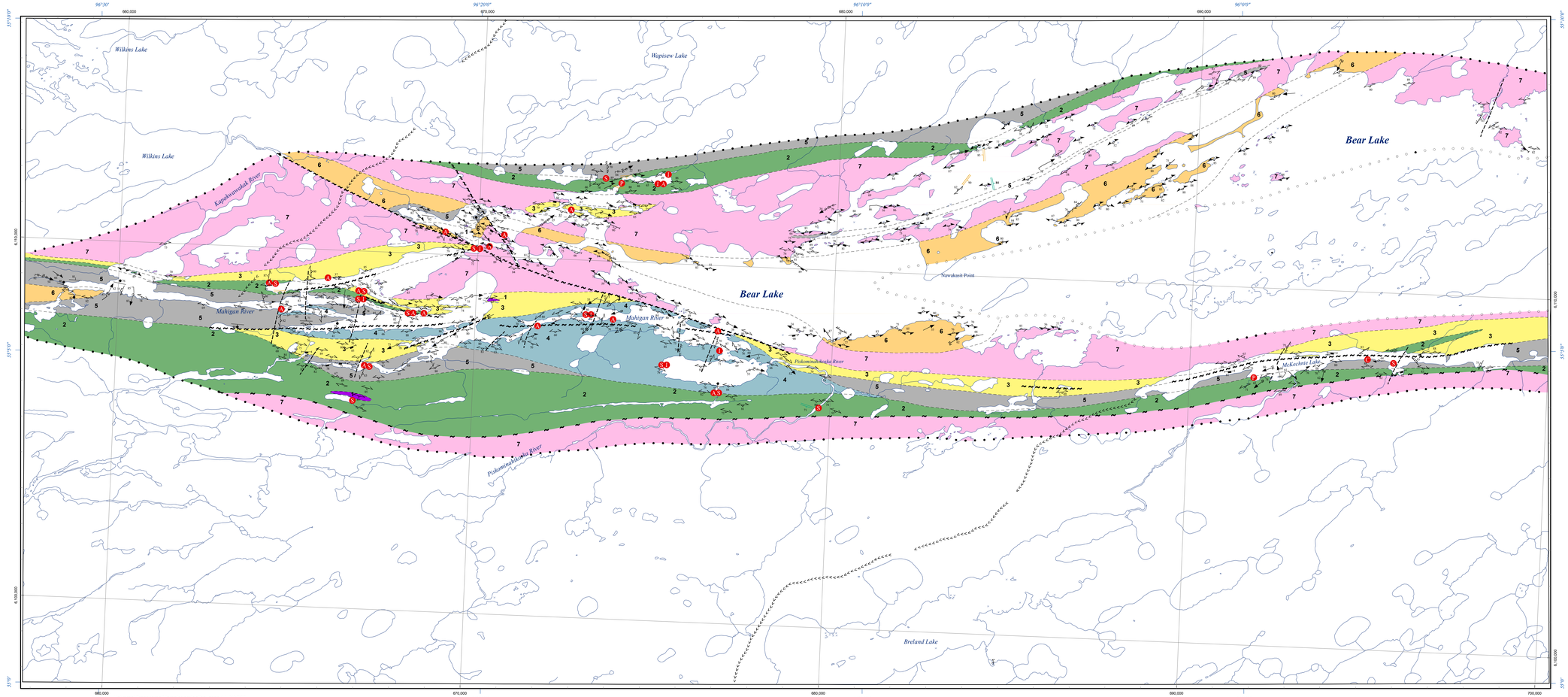
Preliminary Map PMAP2006-2

Bedrock geology of the Bear Lake area, Manitoba (parts of NTS 53M4 and 63P1)



Universal Transverse Mercator projection, zone 14, NAD83

Printed 2006

Legend

Intrusive rocks

7 **Massive granite:** coarse grained, white, light grey or beige, homogeneous, massive to weakly foliated hornblende and/or biotite granite; locally pegmatitic

6 **Gneissic granite-granodiorite:** medium- to coarse-grained granite to granodiorite; beige to light grey or pink, moderately foliated to strongly gneissic and locally mylonitic; approximately 10% biotite; hornblende, K-feldspar augen, and pegmatitic patches locally present; biotite granodiorite gneiss locally contains anastomosing network of foliated leucogranite unit 7 or xenoliths of units 2 to 5

Supracrustal rocks

5 **Sedimentary rocks:** fine to medium grained, rusty weathering greywacke containing 10–20% biotite ± cordierite ± sillimanite; up to 20% quartz-rich melt layers; locally interlayered with units 3 and 4

4 **Volcaniclastic and tuffaceous rocks, crystal tuff:** monomineralic quartz and/or feldspar phenocrysts, commonly highly fragmented and angular; felsic to intermediate fragmental rock interpreted as volcanic breccia composed of felsic and intermediate clasts in aphanitic, light grey, felsic groundmass; locally interlayered with units 3 and 5

3 **Felsic and intermediate rocks interpreted as volcanic rocks:** rhyolite to dacite; fine grained, medium grey, compositionally layered; plagioclase ± biotite phyric, quartz-feldspar porphyritic or aphanitic; locally interlayered with units 2, 4 and 5

2 **Amphibolite interpreted as mafic volcanic rocks:** black, fine to medium grained; common trace pyrite and epidotization; massive, pillowed and layered varieties; locally well developed volcanic pillows with amphibole and garnet-rich selvages (P); common compositional layering interpreted as highly flattened pillow structures; massive amphibolite interpreted to be derived from mafic flows; locally interlayered with units 3 to 5

1 **Ultramafic rocks:** medium to coarse grained equigranular, massive to weakly foliated pyroxenite and hornblendite; closely associated with strongly sulphidic amphibolite of unit 2; locally decimetre sized rafts of altered pyroxenite within pegmatitic leucogranite of unit 7, or dark green, dense, altered amphibole and chlorite-rich schist interpreted as hydrated and metamorphosed ultramafic extrusive or sill

A **Alteration zone:** silica ± epidote ± chlorite ± Fe-carbonate

C **Pebble conglomerate:** interlayered with argillite; rounded, highly flattened clasts in sandstone matrix; clasts are dominantly vein quartz and minor quartz-phyric felsic and hornblende-phyric intermediate volcanic rocks

I **Magnetite-sulphide iron formation:** fine to medium grained, well layered to laminated; forms thin (1–5 cm) horizons within units 2 to 5

P **Pillows:** mafic flow with pillows preserved

S **Abundant visible sulphide**

Geology by:
C.O. Böhm and R.P. Hartlaub[1] (2006)

[1] British Columbia Institute of Technology
3700 Willingdon Avenue, Burnaby, British Columbia, V5G 3H2

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This map is a provisional summary of work carried out during the summer field season and is produced directly from the geologist's manuscript. It is not to be regarded as a final interpretation of the geology of the area.

SUGGESTED REFERENCE

Böhm, C.O. and Hartlaub, R.P. 2006: Bedrock geology of the Bear Lake area, Manitoba, (parts of NTS 53M4 and 63P1); Manitoba Science, Technology, Energy and Mines, Manitoba Geological Survey, Preliminary Map PMAP2006-2, scale 1:50 000.

1:50,000

0 5,000

metres

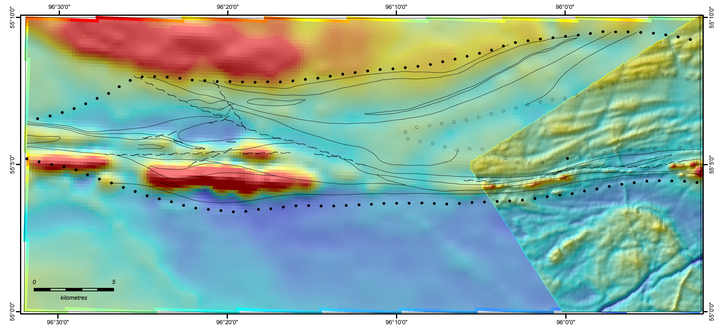
The magnetic data used in this map are a composite of 2 sources:

(1) Regional residual total field magnetic data with a cell size of 200 m available from the Geological Survey of Canada through their download service at:

http://gdr.agg.nrcan.gc.ca/wms/index_e.html

(2) Total field magnetic data at a pixel size of 25 m (eastern portion of map) from a survey done for Kennecott Canada Exploration Inc. in 2001. The data were obtained from assessment file 94984 (Manitoba Science, Technology, Energy and Mines, Winnipeg) available for download from the Manitoba Geological Survey GIS Map Gallery at:

http://www.gov.mb.ca/iedm/mrd/geo/gis



Residual Total Field

nT

High : 2975

Low : -213

SYMBOLS

Primary layering
- Bedding: upright, overturned, top unknown

Foliations
- Foliation: generation unknown
- Gneissosity
- C-fabric: dextral, sinistral, sense unknown
- Shear band: dextral, sinistral

Faults and shears
- Fault: dextral, sinistral, sense unknown
- Shear: dextral, sense unknown

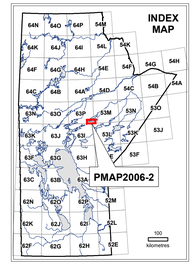
Minor fold axial plane
- Generation unknown, generation 2

Lineation
- Intersection lineation, mineral lineation

Minor fold axis
- S asymmetric: generation unknown
- Z asymmetric: generation unknown, generation 2
- Symmetric: generation unknown, generation 2
- Symmetry and generation unknown

Dikes
- Felsic, mafic

- Contact
- Zone of intense fracturing
- High strain zone
- High strain zone (assumed)
- Reef
- Building
- Esker
- Glacial cover
- Limit of mapping



Manitoba