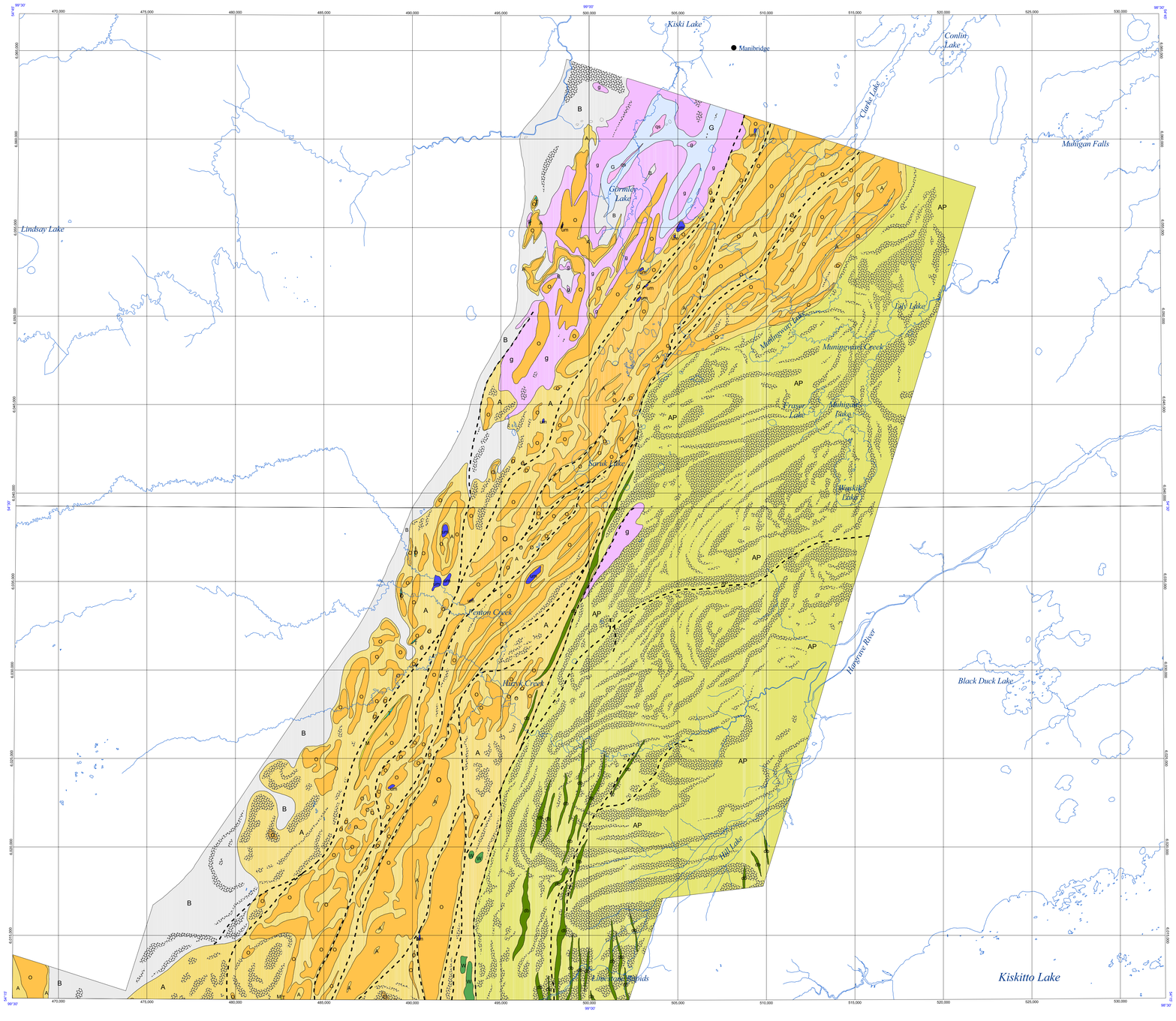
Manitoba Industry, Trade and Mines

Preliminary Map: 2001HB-2

# Geology of the Hargrave River (63J/6), Hill Lake 63J/7), Muhigan Lake (63J/10) and Tyrell (63J/11) area




## LEGEND

INTRUSIVE ROCKS, ORTHOGNEISS

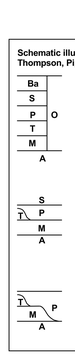
- db — Metadiabase or metagabbro dykes. In O or A, usually belong to Molson dyke swarm
- pg — Pegmatite
- g — Granite, granitoid rocks
- bg — Biotite granite
- qs — Quartz syenite
- gb — Metagabbro, usually associated with um or occuring as subvolcanic sills
- um — Dunite (serpentinized), metaperidotite, metapyroxenite, serpentinite, derived ultramafic schist; usually as sills in Ospwagan Group sequence

- G — GRASS RIVER GROUP, undivided; mainly magnetite-bearing paragneiss; locally hornblende-, biotite-, garnet- or sillimanite-bearing; laminated, thinnly layered; in places crossbedded, pebbly; migmatitized; minor intercalations of felsic metavolcanic rocks
- B — BURNTWOOD GROUP, undivided; greywacke-mudstone metaturbidite, garnet- and graphite-enriched, locally cordierite- and sillimanite-bearing; includes derivatived migmatite
- W — WINNIPEGOSIS BELT ASSEMBLAGE, undivided; ultramafic to mafic volcanic flows, massive, zoned, locally olivine- or clinopyroxene spinifex-textured, aphanitic to ophitic texture common, pillowed flows, hyaloclastite; also includes sub-greenschist facies thinly layered siliceaous siltstone and calcareous siltstone
- O — OSPWAGAN GROUP SUPRACRUSTAL ROCKS, undivided; a sequence of clastic, chemical and metavolcanic rocks belonging to M, T, P, S Formations and Ba assemblage.
  If M Formation is not on the map, then areas of undivided Ospwagan group are defined solely on the basis of geophysical signature.
  In addition, the sequence might be much narrower than shown by the contacts.
  In some instances, Ospwagan Group might not be present and the magnetic anomalies are reflection of increased magnetite content in basement only.
  - Ba — Bah Lake assemblage, undivided; metabasalt flows, pillowed or massive, local breccia; derived amphibolite; metagabbro - diabase subvolcanic sills; picrite sills; minor interflow chert, iron formation, volcanogenic sediment.
    - pp — Picrite, massive or porphyroblastic
  - S — Setting Formation, undivided; feldspathic quartzite and metapelite interlayered in varying proportions in a metaturbidite sequence
  - P — Pipe Formation, undivided; sequence of sulphide, silicate and oxide facies iron formations, sulphidic; chert; metapelite; minor dolomite marble, calc-silicate; near the top sandstone - pelite metaturbidite
    - dm — Dolomite marble intercalation enclosed in silicate facies iron formation of P3
    - ox — Iron formation, oxide facies, found only in P3
    - si — Iron formation, silicate facies, stratigraphic position unknown unless determined by its host P1 or P3
    - su — Iron formation, sulphide facies, stratigraphic position unknown unless determined by its host P1 or P2
    - if — Iron formation, facies unspecified, stratigraphic position unknown
  - T — Thompson Formation, undivided; marlstone or marble, layered, varied in composition and texture; olivine - phlogopite - diopside marble, coarse grained
  - M — Manasan Formation, undivided; basal clastic rocks; metaconglomerate, sandstone, minor shale, graded beds, fining upwards; semipelite schist, rhythmically layered, calc-silicate layer near the top; pegmatite segregations in high grade metamorphic derivatives
- A — ARCHEAN BASEMENT MIGMATITE - GNEISS, undivided, retrogressed, leucogranite to diorite in composition, host to distinct bodies of orthogneiss (1 to 6), ages uncertain
  - 6 — Biotite granite orthogneiss
- AP — ARCHEAN PIKWITONEI GRANULITE BASEMENT, undivided; leucocratic to melanocratic migmatite and gneiss, orthopyroxene-bearing

## SYMBOLS

- Fault
- Structural trend derived from the vertical gradient of a magnetic anomaly
- Outcrop
- Contact

**Schematic illustrations of the relationships of Archean gneisses, Manasan, Thompson, Pipe and Setting Formations.**




Relation between Archean basement and Ospwagan Group. Younging away from A, upwards.

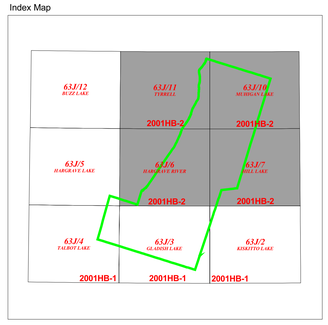
Thompson Formation thinned out on the right and represented by a single line between M and P.

Manasan and Thompson Formations thinned out on the right and represented by a single line between A and P.

5000 0 5000 10000 15000 Meters

1:100000

Index Map

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This map is a preliminary representation of the results of a mapping and compilation program. It is not to be regarded as a final interpretation of the geology of the area. The data used in producing this map was transferred from un-rectified airphotos and thus is subject to distortion. No attempt was made to remove this distortion for this preliminary release.

Suggested reference:

TNB Geology Working Group
2001: THOMPSON NICKEL BELT GEOLOGY, Manitoba Geological Survey, Preliminary Map 2001HB-2, Geology of the Hargrave River (63J/6), Hill Lake 63J/7), Muhigan Lake (63J/10) and Tyrell (63J/11) area, scale 1 : 100 000.

Map projection: Universal Transverse Mercator, Zone 14, North American Datum 1983.