Geology of the Hidden and Louis formations in the Hidden Lake area, Flin Flon region, Manitoba and Saskatchewan (part of NTS 63K13)

LEGEND

<1.845 Ga INTRUSIVE ROCKS

- **B1** Boundary intrusions; fine- to coarse-grained gabbro, locally with various xenoliths
- **Z1** Phantom Lake intrusions
- **G1** Granodorite sills and dikes (?)

MISSI GROUP

- **X1** Conglomerate, wacke, sandstone and siltstone

FLIN FLON ARC ASSEMBLAGE (>1.88 Ga ROCKS)

Synvolcanic intrusive rocks

- **D6** Gabbroic textured, medium- to coarse-grained dikes and sills
- **D5** Gabbroic textured, fine- to medium-grained dikes and sills
- **D4** Aphyric felsic dikes and sills
- **D3a** Fine-grained, grey andesitic dikes with 5 to 20%, 2 to 7 mm amphibole crystals
- **D3b** Coarse-grained, grey, plagioclase-rich andesitic dikes
- **D2a** Plagioclase (5 to 15%, 2 to 10 mm) and pyroxene (1 to 15%, 2 to 10 mm) fine- to medium-grained porphyritic mafic dikes and sills
- **D2b** Pyroxene (5 to 8%, 2 to 10 mm) fine- to medium-grained porphyritic mafic dikes and sills
- **D2c** Plagioclase (5 to 30%, 3 to 15 mm) with 5 to 15% quartz amygdales, fine- to medium-grained porphyritic mafic dikes and sills
- **D1** Aphyric to sparsely plagioclase phyric (<5%), fine to medium grained, massive, commonly flow-banded and commonly containing quartz amygdales (<5%)

Louis formation

Undivided volcanic rocks

- **L3** Aphyric, pillowed to massive basalt flows
- **L2** Mafic volcaniclastic rocks
  - a) mafic lapillistone
  - b) finely laminated mafic tuff
- **L1** Plagioclase (>15%) and pyroxene (>5%) phyric basalt flows
  - a) massive
  - b) pillowed
  - c) contains included tuff
  - d) in situ breccia

Icehouse member

- **C2** Mafic volcaniclastic rocks
  - a) heterolithic lapillistone, containing plagioclase- and pyroxene-porphyritic, non-mygdaloidal to amygdaloidal basalt clasts (70%), aphyric non-amygdaloidal to amygdaloidal (5-10%) basalt clasts, minor (<5%) aphyric rhyolite clasts in a plagioclase and pyroxene crystal-rich mafic tuff
  - b) finely laminated mafic tuff
- **C1** Strongly plagioclase (>25%) and pyroxene (>15%) porphyritic basalt flows
  - a) massive
  - b) pillowed with tuff between pillows

Tower member

- **T2** Mafic tuff to mafic lapilli-tuff with aphyric rhyolite clasts
- **T1** Massive to in situ brecciated aphyric to sparsely plagioclase (<5%) phyric rhyolite

Hidden formation

Undivided intrusive rocks

- **H1** Pyroxene-phyric basaltic cryptoflows and shallow intrusions
  - a) massive, 1 to 5% pyroxene phenocrysts
  - b) contains included tuff
  - c) peperitic

1920 unit

- **I1** Amygdaloidal amphibole-phyric andesite cryptoflows
  - a) massive cryptoflows, 1 to 3 mm amphibole phenocrysts
  - b) pillowed cryptoflow, 1 to 3 mm amphibole phenocrysts
  - c) contains included tuff
  - d) peperitic

Stockwell member

- **N2** Mafic heterolithic lapillistone, containing aphyric non-amygdaloidal to amygdaloidal (1-80%) basalt clasts, minor (<1%) felsic clasts
- **N1** Plagioclase (>20%) and pyroxene (<5%) phyric basalt cryptoflows and flows with local peperite
  - a) massive
  - b) pillowed
  - c) contains included tuff
  - d) peperitic

Reservoir member

- **R4** Mafic volcaniclastic rocks
- **R3** Massive plagioclase (>15% to <20%) and pyroxene (>15% to <20%) porphyritic basalt flows
- **R2** Plagioclase (>5% to <10%) phyric basaltic flows
  - a) massive, may contain up to 5% feldspar phenocrysts, quartz amygdaloidal
  - b) pillowed, may contain up to 5% feldspar phenocrysts, quartz amygdaloidal
  - c) in situ breccia
- **R1** Aphyric to weakly (<5%) plagioclase-phyric basaltic cryptoflows and flows with local peperite
  - a) massive, may contain up to 5% feldspar phenocrysts, quartz amygdaloidal
  - b) pillowed, may contain up to 5% feldspar phenocrysts, quartz amygdaloidal
  - c) contains included tuff
  - d) peperitic
  - e) in situ breccia

Undivided volcaniclastic rocks

- **V2** Mafic volcaniclastic rocks
- **V1** Felsic volcaniclastic rocks, pumice-bearing

Other

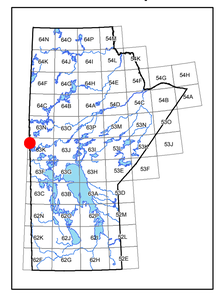
- **GS** Gossan patches
- **E1** Regolith: weathered profile of aphyric basalt (Hidden formation)

NOTE: units with greyed-out text do not appear on map

SYMBOLS

- Contact: defined, approximate, assumed
- Facies: defined, approximate, assumed
- Fault: defined, approximate, assumed
- Syncline fold axis
- Mapping limit
- Area mapped by N. Tardif [1]
- Outcrop
- Flow contact: tops known
- Bedding: tops known
- Foliation: 1st, 2nd generation
- Vein
- L-fabric: 1st generation
- Provincial highway
- Paved road
- Gravel road
- Trail
- Provincial boundary
- Railway

Index map



Geology by: Y. M. DeWolfe[1]

Digital cartography by: M. E. McFarlane

Published by Manitoba Science, Technology, Energy and Mines, Manitoba Geological Survey, 2007
This map is available to download free of charge at manitoba.ca/minerals

[1] Mineral Exploration Research Centre, Department of Earth Sciences, Laurentian University, 933 Ramsay Lake Road, Sudbury, Ontario, P3E 6C7

Suggested reference:
DeWolfe, Y.M. 2007: Geology of the Hidden and Louis formations in the Hidden Lake area, Flin Flon region, Manitoba and Saskatchewan (part of NTS 63K13); Manitoba Science, Technology, Energy and Mines, Manitoba Geological Survey, Open File OF2007-3, map at 1:2000 scale.

0 100 200 metres

1:2000