

GEOLOGY OF THE BOTWOOD (NTS 2E/3) MAP AREA, CENTRAL NEWFOUNDLAND



LEGEND

- SILURIAN OR YOUNGER**
- S_{da} Massive, grey, fine-grained and very fine-grained, zoned, amygdaloidal diabase dykes
 - S_d Massive, grey, uniform fine-grained diabase dykes
 - S_g Massive, epidotized, fine-grained gabbro
- SILURIAN**
- LLANDOVERY OR YOUNGER**
- F₁ Pink, massive, fine-grained granophytic granite
- MOUNT PEYTON INTRUSIVE SUITE (Unit SM)**
- F₂ Pink and cream, massive, medium- and fine-grained, equigranular, biotite ± hornblende granite
 - F₃ Light-grey, massive, medium- and fine-grained, equigranular, biotite ± hornblende granodiorite
 - F₄ Grey, massive, dominantly fine-grained and minor medium-grained, equigranular, uniform and minor layered, pyroxene ± biotite ± hornblende gabbro
 - F₅ Grey, massive, medium-grained, equigranular, pyroxene gabbro
- HODGES HILL INTRUSIVE SUITE (Unit SH)**
- F₆ Grey and buff, massive, medium-grained, equigranular, biotite ± hornblende granodiorite and granite
 - F₇ Grey, massive, medium-grained, equigranular, pyroxene gabbro
- LLANVIRN OR OLDER**
- BOTWOOD GROUP (Units SL and SW)**
- Wigwam Formation (SW)**
- W₁ White, buff and pale-green sandstone and shale-flake conglomerate derived by alteration of units SW₁ and SW₂
 - W₂ Red, clast-supported, polymict conglomerate, composed of subangular pebbles of sandstone and volcanic rocks
 - W₃ Red, thick- and medium-bedded, commonly parallel-laminated and/or cross-laminated, locally rippled and/or graded, variably cleaved, medium-grained quartz-rich sandstone, locally includes matrix-supported shale-flake conglomerate and beds of nodular limestone
 - W₄ Red, aphanitic, flow-banded, felsic volcanic rock
 - W₅ Green-grey, pink- and white-weathering, parallel- and cross-bedded, locally rippled, medium- and thick-bedded, quartz-rich sandstone and minor felsic volcanic-clast conglomerate
- Lawrenceton Formation (SL)**
- L₁ White, buff and light-grey, pyritic, quartz-sericite schist; includes unseparated felsic volcanic rocks west of Southwest Pond
 - L₂ Coarse breccia of green and purple, siliceous, aphanitic blocks in a fine-grained, red siliceous matrix and coarse-grained labaric conglomerate, felsic-clast conglomerate and agglomerate and felsic tuff
 - L₃ Clast-supported, poorly sorted, polymict conglomerate composed of subangular to subrounded cobbles and pebbles of volcanic and sedimentary rocks, and local polymict volcanic breccia
 - L₄ Grey and purple, purple-weathering, plagioclase-porphyrritic, intermediate to mafic lava and oligomict volcanoclastic breccia; possibly equivalent to parts of Unit SL₁
 - L₅ Light- to dark-grey, felsic to intermediate volcanic rocks including banded, plagioclase-porphyritic and aphanitic lava, banded ignimbrite, and massive crystal-tuffic tuff
 - L₆ Mainly green and dark-grey, plagioclase-porphyritic, amygdaloidal basalt flows; flow tops are commonly red or maroon, brecciated and locally contain laminated red sandstone lenses and spher; west of Upper Scissors Pond may be equivalent to parts of Unit SL₁
 - L₇ Grey, green and purple, purple-weathering, plagioclase-porphyritic, intermediate to mafic flows and oligomict volcanoclastic breccia
- LATE ORDOVICIAN AND EARLY SILURIAN**
- ASHGILL TO LLANDOVERY**
- BADGER GROUP AND EQUIVALENTS (OSB)**
- Conglomeratic facies**
- O₁ Green, grey and minor red, very thick- to medium-bedded, variably cleaved, polymict conglomerate containing abundant chert, Jasper and volcanic pebbles and locally fossiliferous limestone clasts, and interbedded with coarse-grained sandstone and minor siltstone
- Argillite facies**
- O₂ Grey-green, laminated argillite and shale, greywacke, siliceous argillite and chert; minor chert-pebble conglomerate
- Greywacke facies**
- O₃ Dark-grey, green and red, locally fossiliferous, medium-bedded, variably cleaved pebble conglomerate and sandstone
 - O₄ Grey and green, medium- and thin-bedded, cleaved, locally fossiliferous, fine-grained greywacke; dark grey and black horstels and agmatized greywacke intruded by granite, granodiorite and gabbro dykes and plugs
- ORDOVICIAN**
- LLANDEILO - CARADOC**
- Shoal Arm, Lawrence Harbour and Lascombe Formations**
- O₅ Black carbonaceous shale; grey chert locally containing manganese layers and red radiolarian chert, greywacke sandstone and minor debris flows near the top of the sequence
- ARENIG - LLANDEILO(?)**
- O₆ Layered, coarse-grained hornblende-pyroxene gabbro sills
- LLANVIRN - LLANDEILO**
- EXPLOITS GROUP (OE)**
- O₇ Thin-bedded, radiolarian chert and grey, orbicular chert interbedded with thin-bedded, silicified feldspathic wacke; minor interbedded, green and red, silicified argillite and chert interbeds; rare pillow breccia
 - O₈ Basaltic pillow lava and subordinate pillow breccia; minor intervals of dark-green chert and grey epiclastic sandstone, diabase dykes minor mafic tuff
- ARENIG - LLANVIRN(?)**
- New Bay Formation (upper)**
- O₉ Light-grey, nodular, siliceous argillite interbedded with thin, slump-folded sandstone interstratified red and green chert and cherty argillite rhythmites; grey and red oolites containing reworked cobbles conglomerate and detached slump folds of epiclastic sandstone beds; conglomeratic to pebbly, graded wacke containing distinctive clasts of tonalite, limestone and basalt
- New Bay Formation (middle)**
- O₁₀ Dark-grey, laminated, pyritic, graptolite-bearing shale and subordinate light-grey, thin-bedded siltstone and fine-grained sandstone
- New Bay Formation (lower)**
- O₁₁ Light-grey, medium-bedded, graded sandstone and interbedded green-grey shale and siltstone; minor pebbly to sandy wacke containing common rip-up clasts of dark-grey shale and slump-folded argillite; minor grey, polymict conglomerate and graded wacke
- LLANVIRN - LLANDEILO(?)**
- WILD BIGHT GROUP (OW)**
- O₁₂ Grey, massive, fine-grained, basalt breccia, pillow breccia and massive basalt dykes; minor felsic tuff; interstratified green-grey epiclastic wacke, laminated argillite and slate
- ARENIG - LLANVIRN(?)**
- O₁₃ Pillow lava and interstitial variegated chert and minor, graded pillow breccia; epiclastic wacke and green-grey laminated argillite
 - O₁₄ Interstratified pillow lava and pillow breccia; buff-weathering felsic pyroclastic rock and pink, flow-layered rhyolite
 - O₁₅ Graded mafic agglomerate interstratified with tuffaceous wacke
- EARLY OR MIDDLE ORDOVICIAN**
- O₁₆ Vesicular, pyroxene-plagioclase porphyritic diorite; auto-brecciated diorite containing ophitic pyroxene, hornblende and feldspar megacrysts; local swarms of diabase dykes; bedded pillow lava and pillow breccia containing interstratified, epiclastic sandstone that grades to green argillite

SYMBOLS

- Geological contact (defined, approximate, assumed, transitional)
- Fault (defined, approximate, assumed)
- Thrust fault (undefined)
- Examined outcrop
- Bedding (tops known) inclined, vertical, overturned
- Bedding (tops unknown) inclined, vertical
- Younging direction
- Igneous layering (inclined, vertical)
- Cleavage (first generation) inclined, vertical
- Cleavage (second generation) inclined, vertical
- Minor folds (first, second generation)
- Anticline (with plunge, unspecified) upright, overturned
- Syncline (with plunge, unspecified) upright
- Intersection lineation (cleavage with bedding)
- Lineation (first generation, unknown)
- Shears (sense of movement undefined)
- Glacial striation (older, younger where cross-cutting)
- Dyke (inclined, vertical)
- Vein (inclined, vertical)
- Fossil locality
- Mineral occurrence (pyrite, arsenopyrite)

Approximate magnetic declination 1980 for centre of map is 27°32' decreasing 11.6' annually.

Geology by W. Lawson Dickson, Stephen P. Colman-Sadd and Brian H. O'Brien; geological assistance by Barry N. Wheaton, Anthony Benoit and Erwin Wheaton. Technical assistance by J.S. Ash, L.W. Nolan and G.J. Kilfoil.

Map produced using the computer programs ROOTS, FIELDLOG and AUTOCAD.

Cartography by W. Lawson Dickson and Terry Sears. This open file preliminary map is subject to revision.

Copies of the open file map may be obtained from the Publications and Information Section, Geological Survey, Department of Natural Resources, P.O. Box 8700, St. John's, Newfoundland, Canada A1B 4J6. Tel. (709) 729-3150 or Fax (709) 729-3493

This project is a contribution to the Canada - Newfoundland Cooperation Agreement on Mineral Development 1990 - 1994. Project carried out by the Newfoundland Department of Natural Resources.

The map contains all information contained in Open File Map 002E/03/0864 by Dickson and Colman-Sadd (1990) and is supplemented by data for the map area contained in O'Brien (1992 and 1993).

References

- Dickson, W.L. and Colman-Sadd, S.P. 1993. Geology of the Botwood map area (NTS 2E/3), Newfoundland. Newfoundland Department of Mines and Energy, Geological Survey Branch, Map 93-99, Open File 002E/03/0864.
- O'Brien, B.H. 1992. Geology of the region around Lewisporte (parts of 2E/2,3,6,7), north-central Newfoundland. Newfoundland Department of Mines and Energy, Geological Survey Branch, Map 92-25, Open File 002E/0852.
- O'Brien, B.H. 1993. Geology of the region around Lewisporte (parts of 2E/2,4,6,8), north-central Newfoundland. Newfoundland Department of Mines and Energy, Geological Survey Branch, Map 93-168, Open File 002E/0889.

Recommended citation:
Dickson, W.L., Colman-Sadd, S.P., and O'Brien, B.H. 1995. Geology of the Botwood map area (NTS 2E/3), Central Newfoundland. Newfoundland Department of Natural Resources, Geological Survey, Map 94-245, Open File 002E/03/0900.

MAP 94-245 Released 1995
Open File Map 002E/03/0900

SCALE:

1:50,000

