

Map 2001-09
GEOLOGY OF THE SEAL BAY BROOK - WEST ARM BROOK AREA (NTS 2E/5), NORTH-CENTRAL NEWFOUNDLAND

Scale 1:50 000
 B. H. O'Brien

LEGEND

Mid Ordovician - Early Devonian
HODGES HILL INTRUSIVE COMPLEX
 Twin Lakes Diorite
11: Early to Late Silurian (?): Medium-grained leucocratic granodiorite; medium-grained equigranular grey gabbro; minor coarse-grained hornblende diorite; rare leucogranite veins; post-tectonic relative to structures in the Exploits Subzone

STRATIFIED AND INTRUSIVE ROCKS OF THE EXPLOITS SUBZONE
Late Ordovician
BADGER GROUP (Unit 10)
 Gull Island Formation
10: Early Late Ordovician: predominantly massive, quartz-rich granular to pebbly wacke; minor thin- and thick-bedded, light-grey sandstone turbidites; rare siltstone along southwest margin of unit

Middle and Late Ordovician
 Shoal Arm Formation
9: Late Middle Ordovician to Early Late Ordovician (?): 9a: black graptolite slate interstratified with very thin beds of pyritic carbonaceous siltstone and dark grey siliceous argillite; 9b: light grey bioturbated chert with rare black shale partings; light grey, thin bedded to laminated, silicified wacke interbedded with green siliceous argillite and irregularly mottled sandstone; 9c: red radiolarian chert, red laminated argillite and red siliceous siltstone with slump-folded nodules; maroon and green siltstone rhythmites (containing pyroclastic-bearing horizons) interbedded with turquoise chert. Only subunit 9a of the Shoal Arm Formation occurs in the Cramp Crazy Lake area.

Ordovician Intrusive Rocks
 Gummy Brook Gabbro
8: Middle Ordovician (?): medium-grained equigranular gabbro sills; minor dark grey diorite sheets; glomerocratic gabbro and diabase (in places cutting epidotized and saussuritized gabbro)

Late Cambrian (?) to Middle Ordovician
WILD BIGHT GROUP
 Pennys Brook Formation
7: Early Middle to Late Middle Ordovician: 7a: thin-bedded, green and grey, variably mottled, concretionary turbidites; thin- and thick-bedded, grey-green sandstone with intricately rip-up clasts of slump-folded banded argillite grading to parallel-laminated sandstone; thickly stratified, dark green, tuffaceous wacke with predominant vesicular basalt and subordinate intermediate to felsic volcanic clasts; massive to thickly bedded epistatic wacke (and associated debris); with mixed sedimentary and volcanic clasts; minor pebbly wacke with distinctive jasper and red argillite clasts; 7b: laterally discontinuous lenses of pillow lava, pillow breccia and massive vesicular basalt breccia, associated sand-matrix siltstones and chaotically slumped mixtures with various volcanic and sedimentary intraclasts
 Sparrow Cove Formation
6: Early to Middle Ordovician (?): dark-green, porphyritic pillow lava with some interstitial variegated chert; subordinate, thin-bedded, light-green, graded sandstone and light-grey, parallel-laminated argillite interstratified with vesicular basalt flows; minor gabbro sills; rare tuff beds and rip-up clasts of tuffaceous wacke

Side Harbour (?) Basalt Unit
5: Early to Middle Ordovician (?): pillow lava, pillow breccia, minor chert and turbidite
5a: in the Side Harbour Pond area, pillow lava associated with jasper-bearing chert and siliceous red argillite; siliceous, hematite-rich vesicular basalt; minor, maroon siltstone lenses intercalated with amygdaloidal basalt flows. (Possibly Omega Point Formation?)
5b: in the Seal Bay Bottom area, green vesicular pillow lava transitional to red pillow lava with jasper disseminations; hematite-rich pillow breccia with interstitial red chert; collapsed, slumped and variably disaggregated pillowed basalt in sand-matrix debris; minor gabbro sills; rare green laminated sandstone and red siliceous argillite. (Possibly lower Omega Point Formation? or upper Grovers Harbour Volcanics?)
5c: in the upper Seal Bay Brook area, hematite-, epidote- and chlorite-bearing pillowed basalt, vesicular pillow lava having jasper disseminations; red and green basalt breccia, in places, grading to fine-grained mafic tuff; local zones of highly discoidal pillow breccia with interstitial red chert; minor jasper-bearing chert and maroon argillite interbeds; rare diorite sills. (Possibly Omega Point Formation? or, alternatively, upper Pennys Brook Formation?)

Banded Grey Argillite Unit
4: Early to Middle Ordovician (?): in the Little Lewis Lake area, thin interbeds of dark grey shale and light grey siltstone, laminated and banded siliceous grey argillite, carbonaceous dark grey slate; minor debris dominated by various sedimentary blocks. In the Seal Bay Brook - Big Lewis Lake area, mostly debris having banded argillite blocks and altered volcanic blocks. (Possibly uncommonly thick part of Omega Point Formation?)
Omega Point Formation
3: Early to Middle Ordovician (?): 3a: red, massive to thickly stratified, poorly-sorted gravel beds with sub-rounded cobbles and boulders of hematized volcanic and intrusive rocks; chaotically slumped debris and red conglomeratic wacke; red chert, red siliceous argillite and hematite banded iron formation; interbedded, red and green, parallel- and cross-laminated siltstone turbidites (having spotted pseudoporphyrilites in places); dark grey shale; light grey, thickly stratified, polytactic, conglomeratic turbidite. 3b: in the Long Pond area, pillowed basalt flows interstratified with red chert, red siliceous argillite, maroon siltstone and grey-green wacke. (Possibly Side Harbour Basalt?)

Grovers Harbour (?) Volcanic Unit
2: Late Cambrian (?) to Early Ordovician: interstratified rhyolite and basalt; minor felsic porphyry and diabase. 2a-f: dominantly felsic intrusive and volcanic rocks of the Long Pond area: hematite-rich quartz-feldspar porphyry (locally injected by red chert veins); light-grey rhyolite breccia and pyritic felsic tuff; rare, purplish-red rhyolite dykes. 2a-m: dominantly mafic volcanic rocks of the Long Pond area: dark-green pillow breccia and light-green basalt flows; minor mixed mafic - felsic volcanic breccia
2b-m: dominantly mafic volcanic rocks of the Little Lewis Lake area: red basalt breccia with disseminated jasper; green vesicular basalt with pyritic quartz stringers; minor slump-folded grey argillite (partially enclosing mafic volcanic blocks)
2c-f: dominantly felsic volcanic rocks of the Kerry Lake - Nanny Bag Lake area: light-grey, well-bedded, flow-folded rhyolite intruded by diabase dykes; minor basalt flows
2c-m: dominantly mafic volcanic rocks of the Kerry Lake - Nanny Bag Lake area: dark-green chloritic pillowed basalt, light-green, epidote-rich, pyritic, netveined basalt; minor, variegated, red and green, vesicular pillow lava
2d-m: dominantly mafic volcanic rocks of the Big Lewis Lake - New Bay Pond area: massive, dark-grey and dark-green basalt flows; minor pillow breccia grading to tuffaceous wacke; rare mafic tectonite
2d-fm: unseparated mafic and felsic volcanic rocks of the Big Lewis Lake - New Bay Pond area: light-green siliceous basalt breccia, dark-green pyritic basalt flows, felsic - mafic crystal lithic tuff; minor debris with banded argillite and siliceous basalt blocks
2e-f: dominantly felsic volcanic rocks of the Indian Cove - Corner Point area: purplish-red rhyolite breccia and hematite flow-banded rhyolite; light-grey, pyritic, rhyolite-dominant volcanic breccia; mixed mafic - felsic volcanic breccia (having outflowed basalt bombs and silicified flow-banded rhyolite blocks); minor, light-green, quartz-phryic crystal tuff; minor quartz-feldspar porphyry; rare, purplish-red rhyolite dykes
2e-m: dominantly mafic volcanic rocks of the Indian Cove - Corner Point area: dark-green pillowed basalt, light-green basalt breccia; minor diorite and diabase

Cambro-Ordovician Intrusive Rocks
SOUTH LAKE IGNEOUS COMPLEX
1: Late Cambrian (?) to Early Ordovician: unseparated mafic and felsic plutonic rocks, including layered gabbro (having swarms of sheeted mafic dykes); fissure-banded megagabbro (in places, having small gossan zones); medium-grained, locally pyritic, blue-quartz tonalite (containing metagabbro enclaves); minor hornblende diorite and gabbro pegmatite

Geology by B. O'Brien, A. Pickett and L. Normore, 2000.
 Base map in digital format published by Surveys and Mapping Branch, Natural Resources Canada, Ottawa.
 Approximate magnetic declination, 1980, at centre of map 26° 30' W, decreasing 11.6° annually.

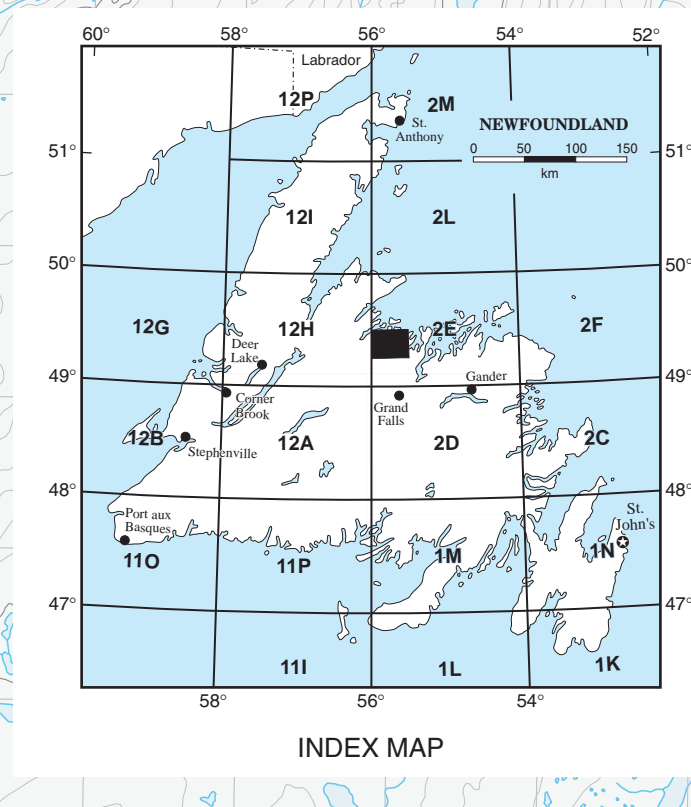
Elevations in metres above sea level.
 Universal Transverse Mercator Projection (UTM) Zone 21.
 North American Datum (NAD) 1927.
 Copies of this map may be obtained from the Geoscience Publications and Information Section, Geological Survey, Department of Mines and Energy, Government of Newfoundland and Labrador, P.O. Box 8700, St. John's, Newfoundland, Canada A1B 4J6
 (<http://www.geosurv.govt.ca>). This map is subject to revision and modification.

Geological cartography by Lorne Ryan and Terry Sears
Recommended Citation
 O'Brien, B. H.
 2001: Geology of the Seal Bay Brook - West Arm Brook area (NTS 2E/5), north-central Newfoundland. Scale 1:50 000. Newfoundland Department of Mines and Energy, Geological Survey, Map 2001-09, Open File 002E/05/1088.

SYMBOLS

- Exposure location
- Strike and dip of bedding (tops known)
- Strike and dip of bedding (tops unknown)
- Strike and dip of bedding (overturned; tick indicates dip)
- Stratigraphic boundary or intrusive contact (approximate)
- Pseudoporphyrilite-bearing alteration zone
- Anticline (locally neutral or synformal) with plunge direction indicated (upright, overturned)
- Syncline (locally neutral or antiformal) with plunge direction indicated (upright, overturned)
- Reverse faults (relative age unspecified)
- Normal faults (relative age unspecified)
- Strike-slip component of fault movement (sinistral, dextral)
- Late-stage transcurrent fault (and/or lineament)

Note: Only selected bedding symbols shown on map; other measurements on minor structures are omitted. Bedding symbols are offset in position from exposure location.



MAP 2001-09
ROBERTS ARM
NEWFOUNDLAND

