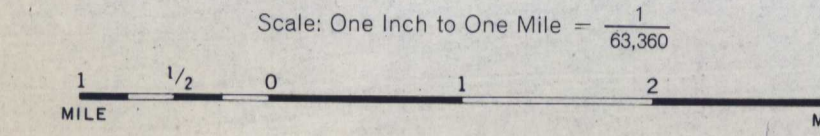
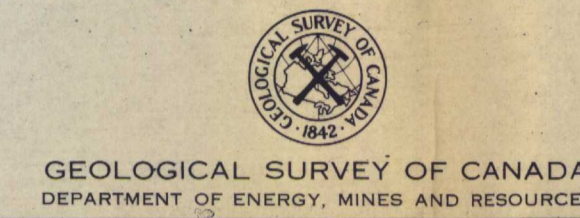


# HODGES HILL

NEWFOUNDLAND



SHEET 2 E 4

## Explanatory Notes - Hodges Hill Map-Area

The oldest rocks of the map-area are the volcanic and sedimentary rocks of the Ordovician Wild Bight Group exposed in the northeast corner of the map-area. Only the uppermost formation of the Wild Bight Group, the Penny's Brook Formation, is exposed in the map-area. The full sequence of the group is exposed in the Roberts Arm map-area (2E/5) to the north. The volcanic and sedimentary rocks of the Wild Bight Group represent a lower to Middle Ordovician island arc sequence which presumably overlies oceanic crust of the Proto-Atlantic Ocean (Kean and Strong, 1975).

The Penny's Brook Formation is overlain conformably by banded cherts and argillites of the Shoal Arm Formation. Black argillites of this formation at the northern end of New Bay Pond have yielded Caradocian graptolites.

The Shoal Arm Formation is overlain conformably by the Sansom Greywacke which contains Mid-Ordovician to Lower Silurian fossils in the Twillingate Map-Area (2E/10) to the northeast. This unit is also exposed as a thermally metamorphosed roof pendant in the northwest corner of the map-area and in a much more extensive area in the southwest corner. Within this latter area of outcrop, there are units of coarse pyroclastic conglomerate which are similar to the Lower Silurian goldstone conglomerates of eastern Notre Dame Bay (2E/6, 2E/10). The relationship of these units to the greywackes is unknown and they have not been mapped in sufficient detail to separate on this map.

In the northeast corner of the map area, the Sansom Greywacke is overlain conformably by mafic pillow lavas which form the base of the Frozen Ocean Group. This pillow lava unit is conformably overlain by a sequence of bedded tuffs, pyroclastics and acidic flow and similar stratigraphic position as the Roberts Arm Group (2E/5, 12H/1, 12H/8), the Cottrells Cove Group (2E/6, 2E/11) and the Chanceport Group (2E/10). All of these groups are undated but are similar in their stratigraphy, style of volcanism and geochemistry. They represent a Late-Ordovician-Silurian phase of volcanism which generally is somewhat bi-modal in character. The Frozen Ocean Group has potential for base-metal deposits because of its correlation with the Roberts Arm Group and because of the abundant felsic volcanics.

Rocks of definite Silurian age lie southeast of the Northern Arm Fault, a continuation of the Reach Fault to the east (2E/7, 2E/10). Silurian subareal to shallow marine volcanic and sedimentary rocks occur only to the east of this major fault. The Botwood Group consists of a lower volcanic unit, the Lawrenceton Formation, overlain by a dominantly redbed assemblage called the Wigwam Formation.

All stratigraphic units north of the Northern Arm Fault are intruded by Devonian igneous bodies of batholithic proportions. The large intrusive complex can be subdivided into an early dioritic phase, the Twin Lakes Diorite Complex, and a late granitic phase, the Hodges Hill granite. The Twin Lakes Diorite Complex also contains local amphibolitic phases.

The main structural feature in the area is the Northern Arm Fault which marks the boundary between the Exploits and Botwood Tectonostratigraphic Zones (Williams, Kennedy and Neale, 1972). It is clearly a post-Devonian feature in the map-area and perhaps represents a large transcurrent fault. Other parallel faults such as the Long Pond and Four Mile faults are also post-Devonian and probably related to the same period of faulting.

The stratigraphic succession in the northeastern part of the map area lies on the west limb of a southeasterly plunging anticline.

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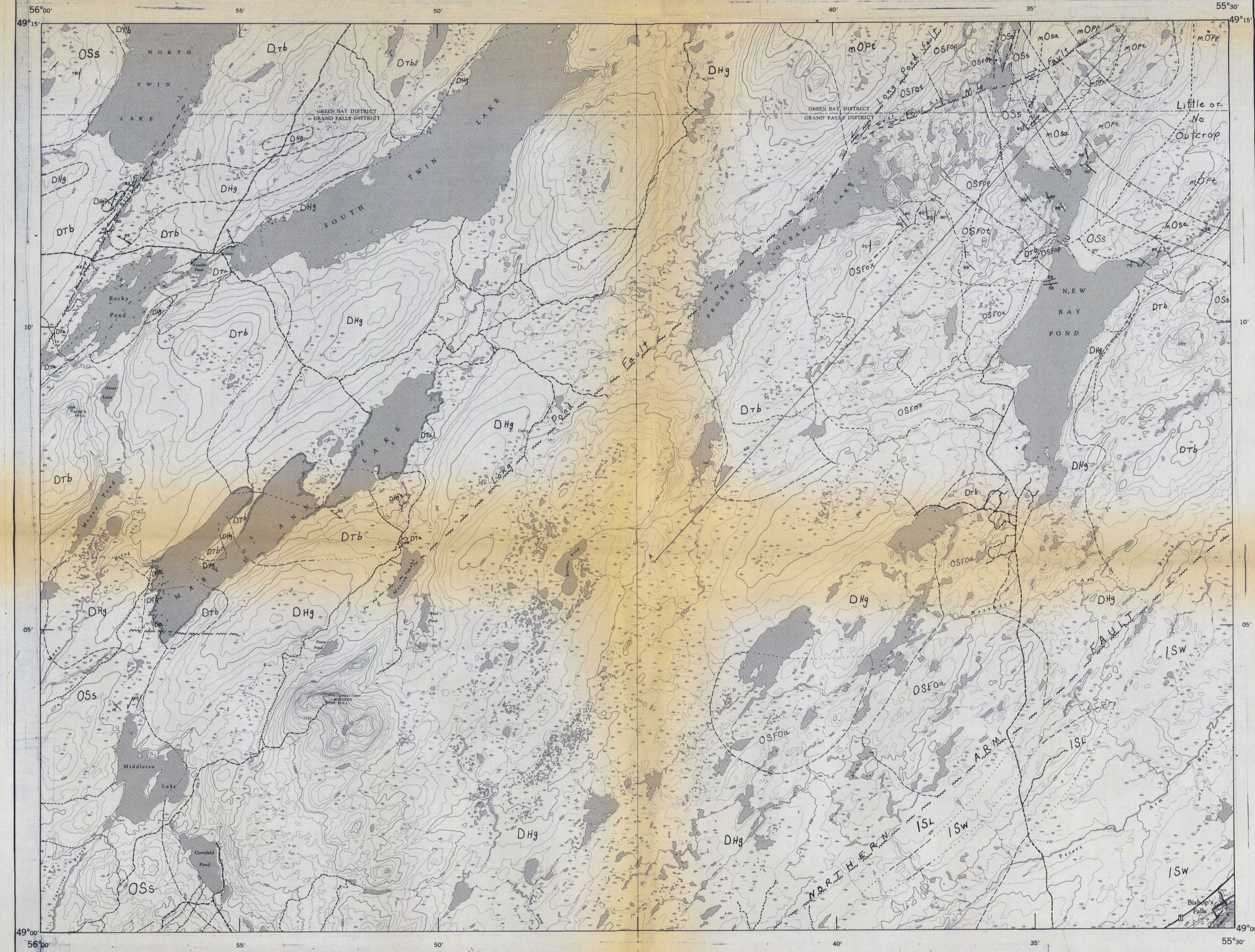
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Compiled by P.L. Dean, Memorial University of Newfoundland, 1976.

- Legend - Hodges Hill Map-Area
- DEVONIAN**
- DHg HODGES HILL GRANITE: Pink to brick-red coarse to medium-grained granite.
  - Db Light grey to light greenish grey, medium-grained diorite and granodiorite.
  - DTb TWIN LAKES DIORITE COMPLEX: (DTb, DTa) Cream to dark grey, medium to coarse grained, hornblende diorite, tonalite, granodiorite, gabbro and amphibolite.
  - DTa Black to dark green, massive to foliated, medium-grained amphibolite.
- SILURIAN**
- BOTWOOD GROUP (1SL, 1SW)**
- 1SW WIG WAM FORMATION: Red to brown and green to green, micaceous sandstone siltstone and quartzite.
  - 1SL LAWRENCETON FORMATION: Coarse acidic to intermediate agglomerate, crystal and lithic tuff; purple, red, green and black amygdaloidal lava
- ORDOVICIAN AND SILURIAN**
- OSFo FROZEN OCEAN GROUP (OSFop, OSFot, OSFox, OSFoa)
  - OSFoa Purple to red and green acidic volcanic flows and pyroclastics; bedded tuff and tuffaceous sandstone.
  - OSFox Coarse volcanic agglomerate, poorly bedded agglomerate and tuff; minor mafic pillows and acidic to mafic flows.
  - OSFot Fine to coarse, bedded tuff and agglomerate; sandstone, greywacke and chert.
  - OSFop Dark green to light green mafic pillow lava, pillow breccia and mafic flows; minor rhyolite flows.
  - OSs SANSOM GREYWACKE: Medium grey well-bedded graded greywacke; local conglomerate horizons near top and bottom of the formation.
- MIDDLE AND LOWER ORDOVICIAN**
- mOsa SHOAL ARM FORMATION: Red to green and black chert; black carbonaceous argillite and argillaceous siltstone; minor siliceous tuff.
- WILD BIGHT GROUP (10op, 10Sc, 10SB, 10SH, mOp)**
- mOp PENNY'S BROOK FORMATION. (mOpT, mOpP)
  - mOpT Red and green thin bedded tuff; green, thick-bedded lapilli tuff; tuffaceous sandstone, greywacke, argillite and chert.
  - mOpP Pillow lava, pillow breccia, mafic flows and agglomerate.

- Geological boundary (defined, approximate and assumed).....
- Bedding, tops known (horizontal, inclined, vertical, overturned).....
- Bedding, tops unknown (inclined, vertical).....
- Dyke trend (inclined, vertical).....
- Schistosity, gneissosity, cleavage, foliation (horizontal, inclined, vertical).....
- Fault (defined, approximate, assumed).....
- Anticline (upright, overturned).....
- Syncline (upright, overturned).....
- Fossil locality.....
- Mineral occurrence.....
- Mineral prospect, test pit or trench.....
- Shaft or quarry (exploration, abandoned production, production, producing).....
- Adit or tunnel.....



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