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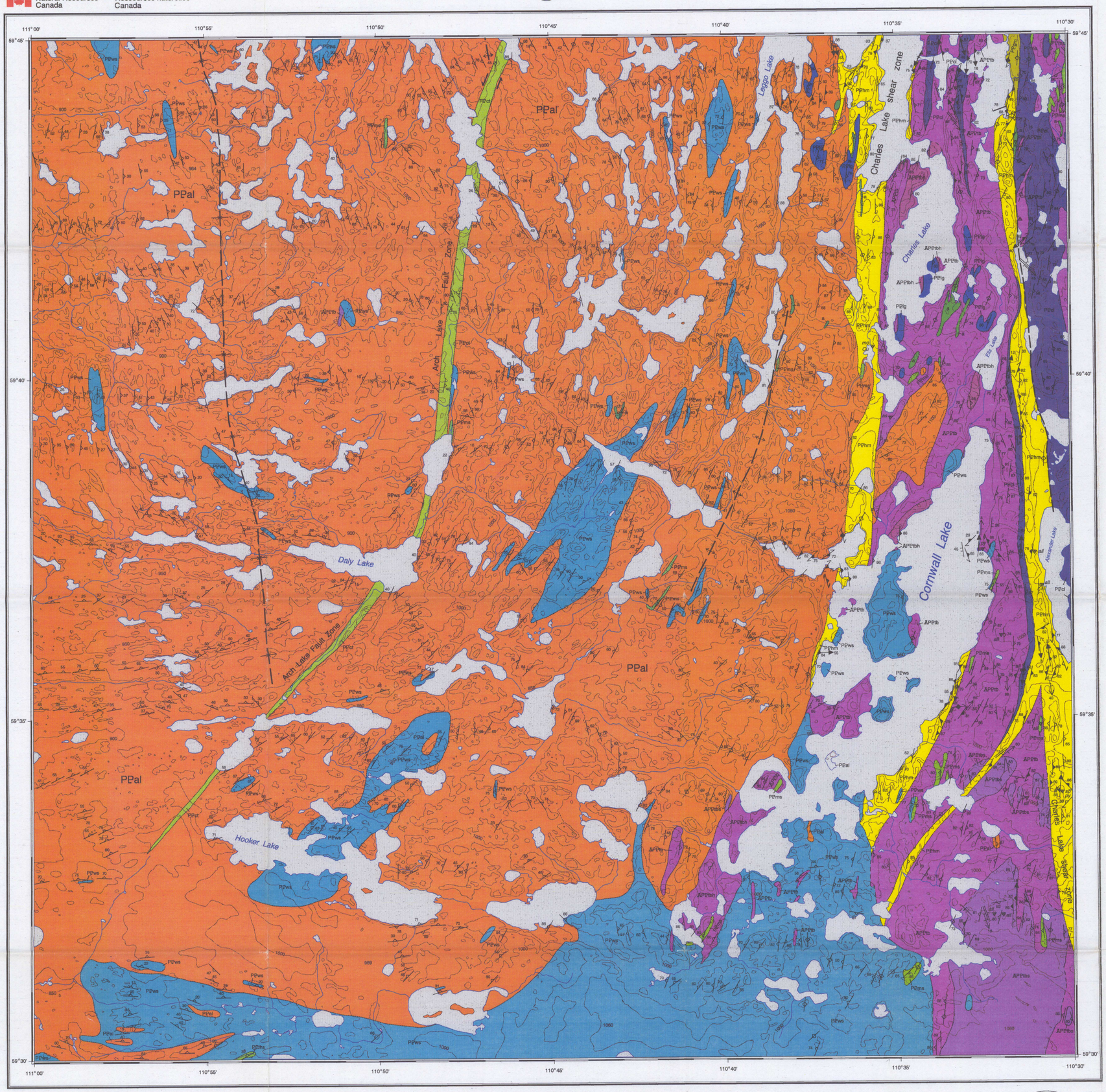
GEOLOGICAL SURVEY OF CANADA | COMMISSION GÉOLOGIQUE DU CANADA



PROTEROZOIC

PALEOPROTEROZOIC

PPct — *CATACLASITE: highly fractured, recrystallized gneiss with randomized fabric (little or no planar fabric and no linear fabric); weathers rust colour; minor breccia, mylonite*

PPgm — *AMPHIBOLITE TO GREENSCHIST GRADE MYLONITE: well foliated, layered, light coloured mylonite to protomylonite with abundant sigma-type porphyroclasts. Protoliths include leucogranite, Eastern Slave granite and Charles Lake granite in CLSZ, Western Slave granite and Arch Lake granite in LLSZ, and Taltson basement gneiss and high-grade mylonite in both shear zones (see Note 3)*

PPlg — *Leucogranite: weakly to non-foliated white to light grey to pink, muscovite-bearing pegmatitic coarse-grained granite, rare biotite*

PPcl — *CHARLES LAKE GRANITE: massive to foliated megacrystic granite with 15-30 percent K-feldspar megacrysts in a medium-grained biotite-rich matrix. Megacrysts have distinctive biotite inclusions. Local fine-grained porphyry with 2-3% disseminated fine-grained pyrite. Unit is Granite F of Godfrey and Langenberg (1986). Deformed in CLSZ into amphibolite to greenschist grade protomylonite to mylonite (see Note 3)*

PPws — *WESTERN SLAVE GRANITE: massive to weakly, locally moderately, foliated, medium- to coarse-grained quartz monzonite, monzogranite, and granite; colour varies from white to pink; small clots of garnet, biotite, hercynite, and cordierite. Locally abundant rafts of granitic gneiss, and pelitic and quartzitic paragneiss. Dykes on margin of main pluton intrude Arch Lake granite and high-grade mylonite of LLSZ*

PPhm — *HIGH-GRADE MYLONITE: well banded, quartzo-feldspathic mylonite, protomylonite, and ultramylonite with sparsely preserved sub-horizontal quartz stretching lineations; amphibolite pull-aparts; ductile feldspars indicative of amphibolite to granulite facies during shearing. Protoliths include Taltson basement gneiss and Arch Lake granite. Variable greenschist and sub-greenschist grade overprint*

PPal — *ARCH LAKE GRANITE: massive, weakly foliated to well-foliated, mylonitic granite to syenogranitic gneiss with 30 to 50 percent lenticular 1x3cm K-feldspar crystals in a fine- to medium-grained matrix of biotite, quartz, feldspar, and magnetite. Locally forms L-S tectonite with rods of blue quartz in association with high-grade mylonite in the Charles Lake and Leland Lakes shear zones (see Note 3)*

PPms — *METASEDIMENTARY GNEISS: large inliers of quartzite, semipelitic gneiss, and pelitic gneiss; common mineral assemblages in pelitic gneiss include biotite+garnet+sillimanite +cordierite in the Leland Lakes area, with biotite+garnet+sillimanite common in areas to the east; locally pervasive pegmatite veins and dykes*

MESOARCHEAN to PALEOPROTEROZOIC

TALTSON BASEMENT COMPLEX

APPtbt — *SYENOGRANITE GNEISS: well foliated, biotite K-feldspar-rich pink syenogranite gneiss, Preliminary U-Pb age is 2138 Ma. Intrudes layered gneisses and is deformed in CLSZ (see Notes 1 and 3)*

APPtbh — *HORNBLENDE GRANITE GNEISS: well foliated to mylonitic hornblende-bearing, white weathering granite gneiss Probable Paleoproterozoic age*

a — *AMPHIBOLITE: well foliated, layered biotite amphibolite; local mafic granulite*

APPtb — *LAYERED GNEISSES: well foliated, banded mylonitic biotite-hornblende granite to granodiorite gneiss, hornblende diorite gneiss, locally well layered, locally dismembered and ptygmatically folded; locally highly sheared straight gneiss; pervasively intruded by medium-grained pink granite dykes, sills, and small intrusions similar to western Slave granite suite, which form up to 50 % of outcrop. Layered gneisses have U-Pb ages from 2.2 to 2.4 Ga (see Note 1)*

MAP SYMBOLS

- Geological contact (defined, approximate, assumed)
- Fault, displacement known, unknown (approximate)
- Antiform, trace of axial surface (approximate)
- Synform, trace of axial surface (approximate)
- Foliation, high-grade mylonite (inclined, vertical)
- Foliation, amphibolite mylonite (inclined, vertical)
- Foliation, greenschist mylonite (inclined, vertical)
- First Foliation (inclined, vertical)
- Second Foliation (inclined, vertical)
- Lineation, high-grade stretching (inclined) 13
- Lineation, greenschist stretching (inclined) 47
- Lineation, greenschist mineral (inclined) 63
- Mesoscopic fold axis, vergence indicated by tick (inclined) 28
- Mesoscopic W-fold axis (inclined) 32
- Mesoscopic U-fold axis (inclined) 38
- Mesoscopic sheath-fold axis (inclined) 15
- Axial plane of mesoscopic fold (inclined, vertical) 86
- Veins: quartz (inclined, vertical) 85
  - pegmatite (inclined, vertical)
  - epidote (inclined, vertical)
  - granite (inclined, vertical)
- Shear bands:
  - ductile, dextral (inclined, vertical) 85
  - ductile, sinistral (inclined) 76
  - brittle, dextral (inclined, vertical) 83
  - brittle, sinistral (inclined, vertical) 87
- Brecciation
- Mineral occurrence (py, pyrite; as, arsenopyrite; mt, magnetite; mo, molybdenite; all, allanite; Cu, chalcopyrite; sp, sphalerite) py
- Gossan

NOTES:

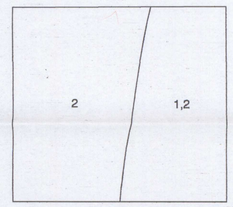
1) U-Pb zircon and monazite ages of granitoids range from 1.97 to 1.92 Ga. Basement rocks range in age from 2.4 to 2.1 Ga, with a probable Archean component (see McNicoll et al. 1994, Lithoprobe Report #37).

2) Ar cooling ages for mica from the NTS 74M area cluster around 1800 Ma; hornblende cooling ages are about 1900 Ma (Baadsgaard and Godfrey, 1972, CJES; Plint and McDonough, CJES, submitted).

3) Charles Lake shear zone (CLSZ) and Leland Lakes shear zone (LLSZ; NTS 74M/11,14) are composite shear zones active under granulite to upper amphibolite facies conditions, and later at amphibolite to greenschist and sub-greenschist facies conditions (McDonough et al., 1993, GSC Paper 93-1C; McDonough et al. 1994, Lithoprobe Report #37; Plint and McDonough, CJES, submitted).

4) Elevations are in feet above mean sea level. Contour interval is 50 feet. Datum: NAD27.

SOURCES OF MAP INFORMATION:



1. McDonough, M.R., Grover, T.W., McNicoll, V.J., Cooley, M.A., Schetselaar, E.M., and Robinson, N.N., unpublished mapping, 1993.

2. Godfrey, J.G. and Langenberg, C.W., 1986, Geology of the Myers-Daly Lakes district, Alberta. Alta. Res. Coun., Report 1984-6.

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Tulip Lake 74M/14 GSC O.F. 2820 ARC 1984-33,34	Mercredi Lake 74M/15 GSC O.F. 2629 ARC 1984-35,36	Andrew Lake 74M/16 GSC O.F. 2864 ARC 58-3A, 61-2A,65-6A,6C
Hay Camp 74M/11 GSC O.F. 2832 ARC 1984-28,29	Cornwall Lake 74M/10 GSC O.F. 2896 ARC 1984-30,31	Colin Lake 74M/9 GSC O.F. xxxx ARC 3,4,7,8
Boquene Lake 74M/6 ARC 1984-24,25	Turtle Lake 74M/7 GSC O.F. xxxx ARC 1984-26,27	Wylie Lake 74M/8 GSC O.F. xxxx ARC 17,18

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Canada

GEOLOGY

CORNWALL LAKE (74M/10)

ALBERTA

Scale 1:50 000 Echelle

Kilometres 1 0 1 2 3 Kilometres

Transverse Mercator Projection

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