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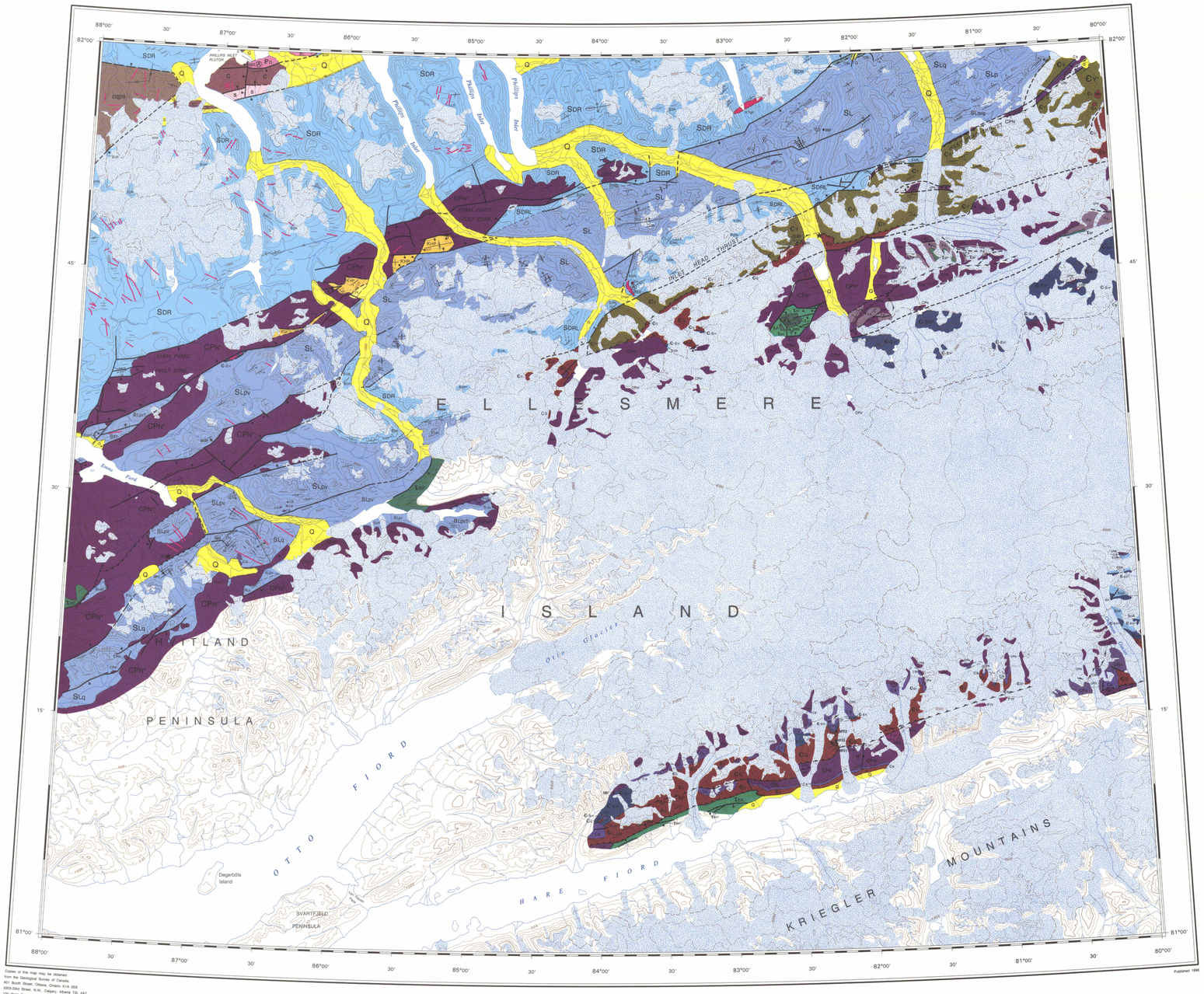
GEOLOGICAL SURVEY OF CANADA | COMMISSION GÉOLOGIQUE DU CANADA



Copies of this map may be obtained from the Geological Survey of Canada
601 Booth Street, Ottawa, Ontario K1A 0E8
3303-33rd Street, N.W., Calgary, Alberta T2L 2A7
100 West Pender Street, Vancouver, B.C. V6B 1R8

LOCATION MAP

MAP 1885A

GEOLOGY

OTTO FIORD

DISTRICT OF FRANKLIN

NORTHWEST TERRITORIES

Scale 1:250 000 - Échelle 1/250 000

Kilometres 5 0 5 10 15 20 Kilometres

Universal Transverse Mercator Projection
Projection transverse universelle de Mercator

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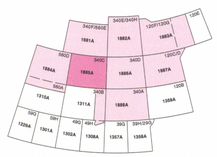


NATIONAL TOPOGRAPHIC SYSTEM REFERENCE AND INDEX TO ADJOINING GEOLOGICAL SURVEY OF CANADA MAPS

Canada

This map has been produced from a scanned version of the original map
Reproduction par numérisation d'une carte sur papier

LEGEND

QUATERNARY

Q — *Unconsolidated sediments (mapped only where bedrock geology cannot be inferred with reasonable certainty)*

TERTIARY

PALEOGENE

TE — *EUREKA SOUND GROUP: sandstone, conglomerate, mudrock; minor coal*

CRETACEOUS

UPPER CRETACEOUS

KHP — *HANSEN POINT VOLCANICS: basalt; basaltic conglomerate; minor alkali basalt, trachyte*

TRIASSIC AND JURASSIC

UPPER TRIASSIC AND LOWER JURASSIC

TJH — *HEIBERG FORMATION: sandstone; minor pebbly sandstone, siltstone, shale, coal*

TRIASSIC

MIDDLE AND UPPER TRIASSIC

TBA — *BLAA MOUNTAIN GROUP: shale, siltstone, in part calcareous; minor sandstone (includes Blind Fiord Formation north of Hare Fiord)*

LOWER TRIASSIC

TBF — *BLIND FIORD FORMATION: siltstone; minor shale, sandstone, conglomerate*

PERMIAN

UPPER PERMIAN

PTF — *TROLD FIORD FORMATION: siltstone, sandstone; minor limestone, conglomerate, chert*
PTF* — *includes underlying basic volcanics (Esayoo Formation?)*

LOWER PERMIAN

PA — *ASSISTANCE FORMATION: shale, limestone*

Carboniferous-Lower Permian facies belts

Carbonate belt

CARBONIFEROUS AND PERMIAN

UPPER CARBONIFEROUS AND LOWER PERMIAN

CPN — *NANSEN FORMATION: limestone; minor sandstone, shale, dolostone*
CPN*: *may include Borup Fiord, van Hauen and/or Degerböls formations*
CPN+: *includes evaporites and(?) Borup Fiord Formation*

UPPER AND LOWER CARBONIFEROUS

CB — *BORUP FIORD FORMATION: sandstone, conglomerate; minor siltstone, shale, limestone (mostly red weathering)*

Basinal belt

CPH — *HARE FIORD FORMATION: siltstone, shale, limestone (dark grey)*

HAZEN FOLD BELT

SILURIAN

LOWER AND (?)UPPER SILURIAN

SDR — *DANISH RIVER FORMATION: calcareous-dolomitic sandstone and slaty mudrock, (mainly sediment gravity-flow deposits). (At the type section the formation ranges in age to Early Devonian but Devonian and (?)Upper Silurian strata are probably not preserved here)*

CAMBRIAN TO SILURIAN

LOWER CAMBRIAN TO LOWER SILURIAN

C-SH — *HAZEN FORMATION: chert; minor mudrock (probably mainly chert member but may include chertified carbonate member)*
C-SH*: *includes Grant Land Formation*

CAMBRIAN

LOWER CAMBRIAN

CG — *GRANT LAND FORMATION: quartzite (partly arkosic), phyllite, slate (grey, purple, green); minor pebble conglomerate (common sediment gravity flow deposits)*
CG+: *may include Hazen Formation*

CLEMENTS MARKHAM FOLD BELT

SUCCESSION B

(Overlaps Succession A and parts of Pearya)

SILURIAN

LOWER AND UPPER SILURIAN

SL — *LANDS LOKK FORMATION: slaty mudrock, sandstone; minor conglomerate*
SLcg: *quartzose sandstone, slaty mudrock, chert conglomerate*
SLq: *quartzose sandstone, slaty mudrock; rare conglomerate*
SLp: *mainly slaty mudrock; minor sandstone*
SLpv: *mainly slaty mudrock; minor sandstone (both partly volcanogenic), tuff (underlies SLq northeast of Emma Fiord) (volcanic content diminishes northeastward)*

LOWER SILURIAN

SDR — *DANISH RIVER FORMATION: calcareous-dolomitic sandstone and slaty mudrock; minor pebble conglomerate (common sediment gravity flow deposits)*

SDRL — *DANISH RIVER AND LANDS LOKK FORMATIONS, undivided*

SUCCESSION A

(Isolated outcrop belts with different stratigraphy. Designations refer to location within the entire fold belt)

Southeastern belt

CAMBRIAN TO SILURIAN

LOWER CAMBRIAN TO LOWER SILURIAN

C-SH* — *HAZEN FORMATION: chert; minor resedimented limestone (lime mudstone, calcarenite, rare pebble conglomerate); locally includes chertified uppermost Grant Land Formation*

CAMBRIAN

LOWER CAMBRIAN

CG — *GRANT LAND FORMATION: quartzite, slate, phyllite*
CG+: *may include fault slices of Yelverton Formation*

CAMBRIAN AND/OR OLDER

LOWER CAMBRIAN AND/OR OLDER

CY — *YELVERTON FORMATION: basaltic and andesitic flows; tuffs and sills (variably altered or metamorphosed), marble, phyllite; minor chert*
CY*: *includes fault slices of Grant Land Formation*

Southwestern belt

SILURIAN

LOWER SILURIAN

SF — *FIRE BAY FORMATION: volcanogenic sandstone, conglomerate, siltstone; volcanic flows and tuffs; slaty mudrock, siltstone, sandstone*
SF+: *includes Hazen Formation: chert, slaty mudrock*

Northwestern belt

ORDOVICIAN

UPPER ORDOVICIAN (SILURIAN)

OK — *KULUTINGWAK FORMATION: mainly member B, marble; may include member A, dolostone; volcanics, phyllite, sandstone*

West-central belt

ORDOVICIAN(?) AND SILURIAN

ORDOVICIAN(?) AND LOWER SILURIAN

OSv — *Volcanic flows and tuff (including trachyandesite, andesite); minor limestone*

PEARYA

SUCCESSION 2

Lithological units

NEOPROTEROZOIC TO LOWER ORDOVICIAN

c — *Marble*

cqps — *Marble, quartzite, phyllite, schist; minor diamictite (internal stratigraphy unknown; diamictite may be Neoproterozoic, Varanger and correlative with Gypsum River diamictite, map unit L2 of Clements Markham Inlet map area)*

s — *Biotite schist, garnetiferous*

SUCCESSION 1

NEOPROTEROZOIC AND(?) MESOPROTEROZOIC

LOWERMOST NEOPROTEROZOIC AND(?) UPPER MESOPROTEROZOIC

Pn — *Phillips Inlet Pluton: biotite gneiss, granodiorite composition; (radiometric age (zircon) probably indicates time of intrusion).*
Outcrops farther northeast: biotite gneiss, partly with quartz monzonite composition (possibly older); (common augen structure, cataclasis and retrograd metamorphism in both areas)

INTRUSIONS

(Exclusive of metamorphosed intrusions of Early Neoproterozoic or older age)

CRETACEOUS(?)

LATE CRETACEOUS(?)

K?qd — *Quartz diorite*

DEVONIAN OR YOUNGER

LATE DEVONIAN OR YOUNGER

D?qm — *Monzonite and related rocks*

DEVONIAN

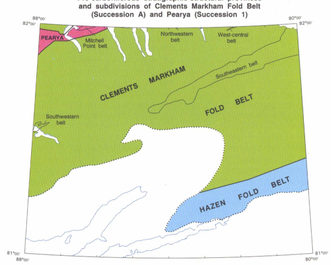
LATE DEVONIAN

Dtn — *Tonalite*

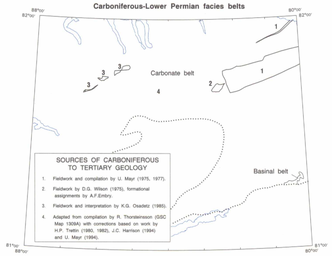
AGE UNKNOWN

Mafic dykes and sills of different ages

Pre-caniferous stratigraphic-structural provinces and subdivisions of Clements Markham Fold Belt (Succession A) and Pearya (Succession 1)



Carboniferous-Lower Permian facies belts



Geological boundary (defined, approximate, assumed or projected under ice or overburden)

Bedding, top known (horizontal, inclined, vertical, overturned, photogrammetric dip determination)

Bedding, tops unknown (horizontal, inclined, vertical, dip unknown)

Bedding, general trend

Bedding, estimated dip from air photographs (inclined)
very gentle (about 1° to 3°)
gentle (about 3° to 10°)
medium (about 10° to 25°)
steep (about 25° to 45°)
very steep (about 45° to 89°)

Lineament (from air photographs)

Fault (downthrow side unknown; defined, approximate, assumed or projected through ice, overburden or water)

Fault (solid circle indicates downthrow side; mainly normal faults, high-angle reverse faults or strike slip faults with vertical component; defined, approximate, assumed or projected through ice, overburden or water)

Strike slip fault (arrows indicate relative movement; defined, approximate, assumed or projected through ice, overburden or water)

Thrust fault (teeth indicate upthrust side; defined, approximate, assumed or projected through ice, overburden or water)

Anticline (upright, overturned; arrow indicates plunge)

Syncline (upright, overturned; arrow indicates plunge)

Locality where age has been determined; in millions of years (e.g. 462)

Stratigraphic section (thickness determined on the ground: thickness determined by photogrammetry; type section; designation by letters and/or numbers)

Mineral occurrence (e.g. Cu)

Stratigraphic sections of pre-Carboniferous rocks by H.P. Trettin (1971, GSC Bulletin 203; section HFW; in press, GSC Bulletin 425; sections SWX1, HP1) and D.G. Esson (1994, GSC Bulletin 430; sections HFE1 to HFE3); Carboniferous rocks by R. Thorsteinsson (1974, GSC Bulletin 224; section 106); Mesozoic rocks by D.G. Wilson (WR9, formational assignments by A.F. Embry)

Pre-Carboniferous geology based on field work by H.P. Trettin (1962, 1966, 1975, 1980, 1982) and by J.C. Harrison (1994); compiled by H.P. Trettin

Digital cartography by the Geological Survey of Canada (Calgary)

Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

Digital base map at the same scale from Geomatics Canada, Department of Natural Resources, modified for publication by the Geological Survey of Canada

Copies of the topographical edition of this map may be obtained from the Canada Map Office, Department of Natural Resources, Ottawa, Ontario, K1A 0E9

The proximity of the North Pole causes the magnetic compass to be erratic in this area. Mean magnetic declination 1995, 94°14' West, decreasing 32.8' annually. Readings vary from 88°31' W in the SE corner to 100°28' W in the NW corner of the map

Elevations in feet above mean sea level

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Trettin, H.P. and Mayr, U.
1996: Geology, part of Otto Fiord, District of Franklin, Northwest Territories; Geological Survey of Canada, Map 1885A, scale 1:250 000