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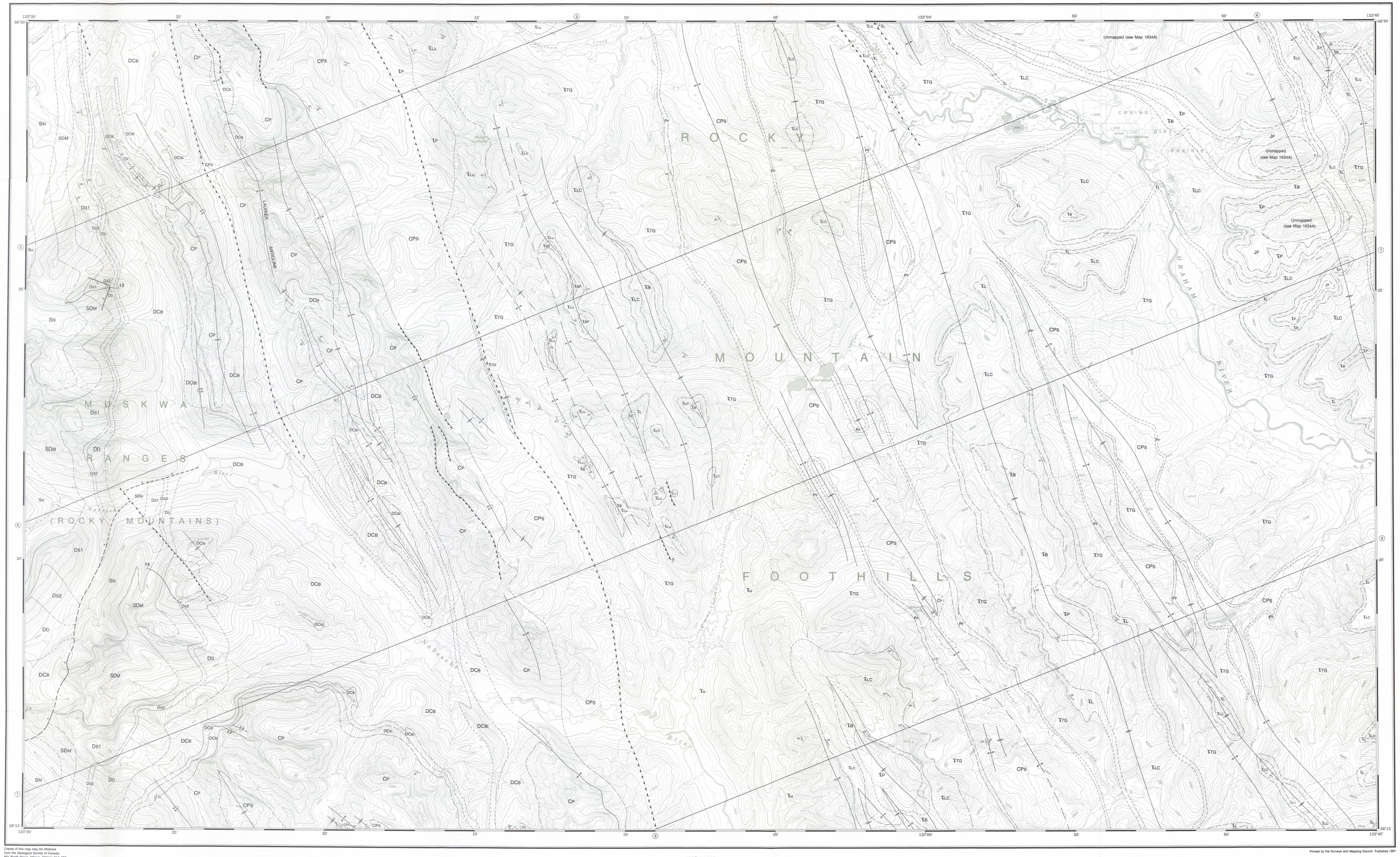
DEPARTMENT OF ENERGY, MINES AND RESOURCES
MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES



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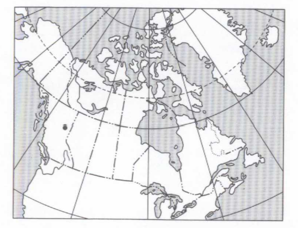

INDEX MAP

MAP 4-1986

GEOLOGY

EMERSLUND LAKES AND HACKNEY HILLS

BRITISH COLUMBIA

Scale 1:50 000

Kilometres 1 0 1 2 3 4 Kilometres

Transverse Mercator Projection
CM 123°, Scale Factor 0.9996
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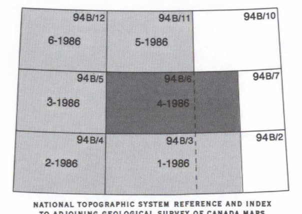

Canada

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Reproduction par numérisation d'une carte sur papier

LEGEND

Weighted legend blocks indicate map units that appear on this map

EAST

CENOZOIC

QUATERNARY
PLEISTOCENE AND RECENT

Qal — *Gravel, sand, silt; clay, and till*

MESOZOIC

CRETACEOUS
UPPER CRETACEOUS (Cenomanian)

KD — *DUNVEGAN FORMATION: sandstone, shale, and conglomerate*

LOWER CRETACEOUS (Albian) AND UPPER CRETACEOUS (Cenomanian)
FORT ST. JOHN GROUP (KM - KSu)

KSu — *SULLY FORMATION: sideritic shale, siltstone; marine. Includes some Upper Cretaceous beds at the top*

KSk — *SIKANNI FORMATION: fine grained sandstone; minor shale, coal, and conglomerate; marine*

KHu — *HULCROSS FORMATION: dark grey, concretionary shale; marine*

KGt — *GATES FORMATION: massive- to thick-bedded sandstone; platy sandstone and shale; silty mudstone*

KM — *MOOSEBAR FORMATION: dark grey shale; marine*

KFJ — *FORT ST. JOHN GROUP: undivided (schematic)*

LOWER CRETACEOUS (Barremian-Aptian)
BULLHEAD GROUP (KCd - KG)

KG — *GETHING FORMATION: fine grained sandstone; minor shale, coal, and conglomerate; marine and nonmarine*

KCd — *CADOMIN FORMATION: massive conglomerate and conglomeratic sandstone; nonmarine*

KCG — *BULLHEAD GROUP (CADOMIN/ GETHING FORMATIONS): undivided (structure section)*

JURASSIC AND CRETACEOUS
UPPER JURASSIC(?) AND LOWER CRETACEOUS (Tithonian-Valanginian)
MINNES GROUP (KBp - KBi)

KBi — *BICKFORD FORMATION: interbedded, fine grained sandstone and shale*

KMh — *MONACH FORMATION: massive, quartzitic sandstone*

KBp — *BEATTIE PEAKS FORMATION: interbedded, fine grained sandstone and shale; marine. May possibly include Monach Formation equivalents*

KBB — *BEATTIE PEAKS FORMATION and younger beds: interbedded, fine grained sandstone, and shale; marine. May include the Monach and Bickford formations*

JKM — *MONTEITH FORMATION: massive, quartzitic sandstone. May include some Jurassic strata*

JKMn — *MINNES GROUP (undivided)*

JURASSIC
LOWER AND UPPER JURASSIC (Sinemurian?-Tithonian)

JF — *FERNIE FORMATION: phosphatic and sideritic shales; siltstone; minor sandstone; marine*

TRIASSIC
UPPER TRIASSIC (Norian)

ŦP — *PARDONET FORMATION: carbonaceous and argillaceous limestone; silty limestone; calcareous and dolomitic siltstone*

UPPER TRIASSIC (Karnian)

ŦB — *BALDONNEL FORMATION: massive limestone and dolostone with siltstone and sandstone interbeds*

ŦBP — *BALDONNEL AND PARDONET FORMATIONS (undivided)*

ŦC — *CHARLIE LAKE FORMATION: dolomitic and calcareous sandstone; siltstone; sandy limestone; dolostone; and minor breccia (structure section)*

MIDDLE AND UPPER TRIASSIC (Ladinian-Karnian)

ŦL — *LIARD FORMATION: massive, dolomitic to calcareous sandstone; calcareous and dolomitic siltstone; minor dolostone*

ŦLC — *LIARD AND CHARLIE LAKE FORMATIONS (undivided)*

LOWER AND MIDDLE TRIASSIC (Griesbachian-Ladinian)

ŦTG — *TOAD AND GRAYLING FORMATIONS: recessive, calcareous siltstone; silty limestone; silty shale; minor silty dolostone and calcareous sandstone*

Ŧu — *TOAD AND GRAYLING, LIARD, CHARLIE LAKE, BALDONNEL, AND PARDONET FORMATIONS (undivided)*

PALEOZOIC

PERMIAN
LOWER AND UPPER PERMIAN (Artinskian-Wordian)

PF — *FANTASQUE FORMATION: massive, grey chert containing abundant sponge spicules*

LOWER PERMIAN (Asselian-Sakmarian)

PK — *KINDLE FORMATION: siltstone; shale; and limestone. Mapped as part of the Stoddart Group (schematic)*

CARBONIFEROUS
LOWER CARBONIFEROUS (upper Viséan-lower Namurian)
STODDART GROUP

CS — *GOLATA, KISKATINAW, and TAYLOR FLAT FORMATIONS (undivided): shale; sandstone; limestone; and siltstone (structure section)*

CARBONIFEROUS AND PERMIAN
LOWER CARBONIFEROUS
TO LOWER PERMIAN

CPS — *STODDART GROUP AND KINDLE FORMATION (undivided)*

CARBONIFEROUS AND PERMIAN
LOWER CARBONIFEROUS
TO UPPER PERMIAN

CP — *STODDART GROUP, KINDLE AND FANTASQUE FORMATIONS: undivided (structure section)*

LOWER CARBONIFEROUS (upper Tournaisian-lower Viséan)
PROPHET FORMATION (CP1 - CP2)

CP2 — *Upper unit: massive, light grey limestone, and chert*

CP1 — *Lower and middle units: limestone; chert; dolostone; shale, and siltstone*

CP — *PROPHET FORMATION (undivided): massive limestone; dolostone; chert*

DEVONIAN AND CARBONIFEROUS
UPPER DEVONIAN-LOWER CARBONIFEROUS

DCB DCBl — *BESA RIVER FORMATION: shale; calcareous shale; siltstone; calcareous siltstone; silty limestone; and limestone. Limestone marker unit (DCBl): limestone; and silty, nodular limestone*

DEVONIAN
MIDDLE DEVONIAN

DD — *DUNEDIN FORMATION: limestone; dolostone; argillaceous limestone; secondary, coarsely crystalline dolomite*

LOWER AND MIDDLE (?) DEVONIAN
STONE FORMATION (DS1 - DS2)

DS2 — *Upper unit: massive, light grey, medium crystalline dolostone*

DS1 — *Lower unit: medium- to thick-bedded, ochre and grey weathering, sandy dolostone and dolomitic, quartz sandstone*

DS — *STONE FORMATION (undivided): dolostone; dolomitic quartz sandstone; quartz sandstone; medium- to thick-bedded light grey and light ochre*

SILURIAN (?) AND DEVONIAN
UPPER SILURIAN (?) AND LOWER DEVONIAN

SDM — *MUNCHO-McCONNELL FORMATION: thick-bedded to massive, light grey dolostone and sandy dolostone*

SILURIAN(?) AND DEVONIAN
UPPER SILURIAN(?)
TO MIDDLE(?) DEVONIAN

SDMS — *MUNCHO-McCONNELL AND STONE FORMATIONS: undivided (structure section)*

SILURIAN(?) AND DEVONIAN
UPPER SILURIAN (?)
TO MIDDLE DEVONIAN

SDMD — *MUNCHO-McCONNELL, STONE, AND DUNEDIN FORMATIONS: (undivided)*

SILURIAN
LOWER SILURIAN (upper Llandoverian)

SN — *NONDA FORMATION: dolostone; limestone; carbonaceous limestone and dolostone; black chert nodules and lenses*

ORDOVICIAN
UPPER ORDOVICIAN (upper Caradocian-?Ashgillian)

Oqd — *Quartzite-dolomite unit: quartzite; dolomitic quartz sandstone; microcrystalline dolostone with black chert nodules; carbonaceous, nodular limestone*

LOWER AND MIDDLE ORDOVICIAN (Llanvirnian-Caradocian)

OS OSv — *SKOKI FORMATION: dolostone; carbonaceous and argillaceous dolostone; argillaceous limestone; dolomitic siltstone. Volcanic marker unit (OSv): basaltic flows; pyroclastics; resedimented volcanic sandstone and conglomerate*

CAMBRIAN AND ORDOVICIAN
UPPERMOST CAMBRIAN AND LOWER ORDOVICIAN (Trempealeauan-Arenigian)
KECHIKA GROUP

ЄOK — *Cleaved, phyllitic, calcareous siltstone and shale; silty limestone; wavy banded limestone; sandstone; minor, green weathering, altered volcanic beds*

CAMBRIAN
MIDDLE (?) CAMBRIAN

Єd — *Dolomite unit: medium crystalline dolostone; sandy dolostone*

LOWER CAMBRIAN

Єq — *Quartzite unit: orthoquartzite; calcareous shale; silty quartzite; siltstone; shale. Probable equivalent of the Gog Group*

PROTEROZOIC

UPPER PROTEROZOIC
MISINCHINKA GROUP

PM PM2 — *Phyllitic and schistose pelite; quartzite; minor limestone. Carbonate marker unit (PM2): massive limestone and dolostone. Possible equivalent of the Byng Formation*

WEST

KBh — *BUCKINGHORSE FORMATION: sideritic shale; siltstone; and minor sandstone; marine*

ŦLu — *LUDINGTON FORMATION: dolomitic to calcareous siltstone and sandstone; finely crystalline limestone; bioclastic limestone. Equivalent to Liard, Charlie Lake, and Baldonnel formations.*

ROAD RIVER "STRATA"

DEVONIAN
LOWER(?) AND MIDDLE DEVONIAN (?Eifelian)

Dqs — *Dolomitic quartz sandstone unit: quartz sandstone with dolomite cement*

SILURIAN AND DEVONIAN
UPPER SILURIAN AND LOWER DEVONIAN (Ludlovian into ?Eifelian)

SDbs — *Brown siltstone unit: siltstone; shale; limestone; quartz sandstone; and chert*

SILURIAN
LOWER SILURIAN (Llandoverian)

Sb — *Breccia unit: breccia composed of angular, lithic dolomite clasts in dolomite cement; chert lenses; carbonaceous limestone and dolostone beds near base*

Scl — *Carbonaceous limestone unit: carbonaceous limestone; calcareous shale; limestone; and graptolitic shale. May include beds of Late Ordovician age*

ORDOVICIAN
MIDDLE AND UPPER ORDOVICIAN
(Caradocian into Ashgillian)

Osq — *Graptolitic shale-quartzite unit: shale; calcareous shale; siltstone; argillaceous limestone; and quartz sandstone turbidites*

ORDOVICIAN AND SILURIAN
MIDDLE ORDOVICIAN
TO LOWER SILURIAN

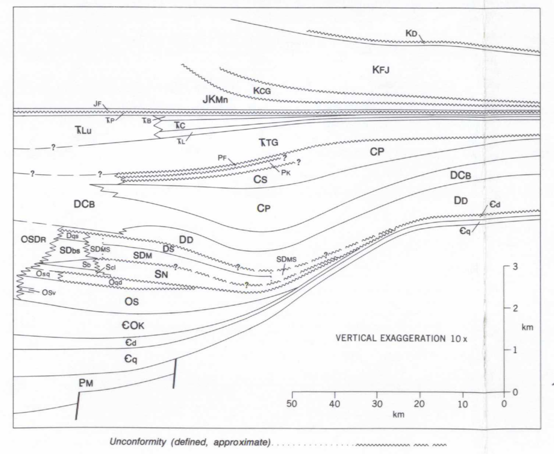
OSR — *Graptolitic shale-quartzite unit and Carbonaceous limestone unit (undivided)*

ORDOVICIAN, SILURIAN AND DEVONIAN
MIDDLE ORDOVICIAN
TO MIDDLE DEVONIAN

OSDR — *ROAD RIVER "STRATA" (undivided)*

SCHEMATIC STRATIGRAPHIC RELATIONSHIPS

Halfway River Area



Geological boundary (defined, approximate, assumed)
Facies boundary
Bedding, tops known (inclined, vertical, overturned)
Fault, extension (symbol also applied to vertical faults; solid circle indicates downthrow side; defined, approximate, assumed)
Thrust fault (synonymous with contraction fault; teeth indicate upthrust side; defined, approximate, assumed)
Anticline (trace of axial plane; overturned)
Syncline (trace of axial plane; overturned)
Fossil locality, GSC catalogue number — C-60911 Ⓕ
Measured stratigraphic section (see text for field section data) — 10
Dotted line denotes change in mapping precision. Stratigraphic subdivisions are amalgamated at dotted line — OSR : Scl / Osq
Line of section — ④—④

Geology by R.I. Thompson, 1975-76, assisted by Douglas Noakes and Robin Day, 1975 and Scott Trollope and Neil Godfrey, 1976

Geological compilation by R.I. Thompson

Geological cartography by G.S. Whitman, Institute of Sedimentary and Petroleum Geology, Geological Survey of Canada

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

Base maps at the same scale published by the Surveys and Mapping Branch in 1983 and 1981

Copies of the topographical edition covering this map area may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa, Ontario, K1A 0E9

Approximate magnetic declination 1987, 25°40′ East, increasing 18.7′ annually

Elevations in feet above mean sea level

Recommended citation:
Thompson, R.I.
1987: Geology Emerslund Lakes and Hackney Hills, British Columbia; Geological Survey of Canada, Map 4-1986, scale 1:50 000

Note: For structure sections, see Map 1634A, sheet 2

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