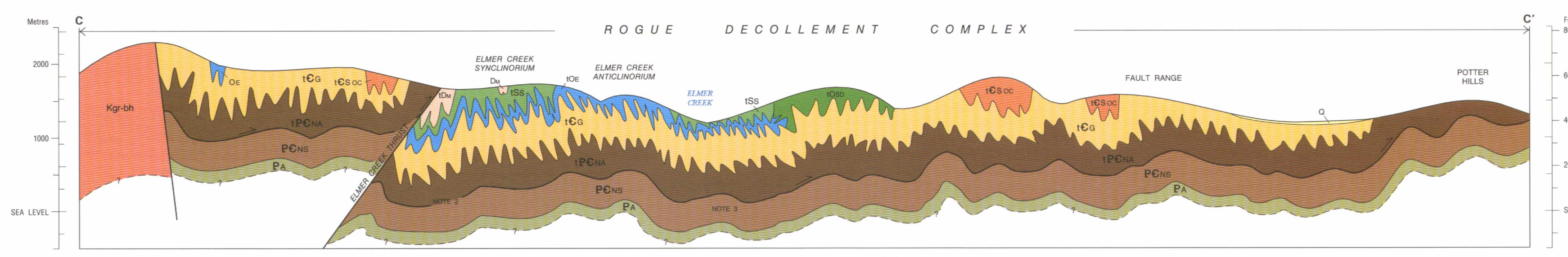

Structure cross-section along C-C′

LEGEND

QUATERNARY
PLEISTOCENE AND RECENT

T	*Tufa; calcareous*
Qb	*Boulder and blocky debris; poorly sorted*
Q	*Undifferentiated*

CRETACEOUS
UPPER CRETACEOUS

Kgr-b,bh	*Granite; quartz monzonite; (b) with biotite, (bh) with biotite and hornblende*

SOUTHWESTERN FACIES (105-O/7,10,15)

DEVONIAN
LOWER TO MIDDLE DEVONIAN

DM	*MISFORTUNE FORMATION: chert; dark grey to black; minor black shale; whiteish weathering*

SILURIAN

SS	*STEEL FORMATION: argillite; rusty green to buff; minor black shale and chert, and prominent bed of bright orange weathering dolostone*

ORDOVICIAN

OE, OE-u, OE-l	*ELMER CREEK FORMATION: (u) chert and siliceous shale; black, graptolitic; (l) chert, siliceous argillite; grey, upper part bioturbated; minor limestone*

CAMBRIAN TO SILURIAN
LOWER CAMBRIAN TO SILURIAN

ЄSOC	*OLD CABIN FORMATION: basic volcaniclastics, breccias, lapilli tuff, flows, sills, dykes; minor sedimentary rock units*

CAMBRIAN

ЄG, ЄOC	*GULL LAKE FORMATION: agillite; buff, green; minor units of shale, chert, quartzite, limestone and volcaniclastic rocks (Gv where volanics are abundant) (OC) Old Cabin Tongue: basic volcaniclastics, breccias, lapilli tuff, flows, sills, dykes; minor sedimentary rock units*

PROTEROZOIC AND CAMBRIAN
UPPER PROTEROZOIC TO LOWER CAMBRIAN
HYLAND GROUP (PY - PЄNA)
NARCHILLA FORMATION (PЄNS - PЄNA)

PЄNA	*Arrowhead Lake Member: argillite; maroon and pale green; minor quartzite, conglomerate, limestone. Lower Cambrian in map-area*
PЄNS	*Senoah Member: argillite; grey green buff; minor, thick units of quartzite and quartz-pebble conglomerate; also minor units of limestone and silty limestone*

PROTEROZOIC
UPPER PROTEROZOIC

PA	*ALGAE LAKE FORMATION: limestone, arenaceous limestone; minor dolostone, argillite, breccia; upper part resistant, lower part recessive, thin bedded*
PY	*YUSEZYU FORMATION: quartzite, calcareous quartzite; thick bedded; thin beds argillite, argillaceous limestone (upper part present immediately west of map area)*

UPPER PALEOZOIC NORTHEAST OF HESS RIVER (105 - O/9,10,15,16)

(southwest part of area)

DEVONIAN
UPPER DEVONIAN

DTH, DTHcg	*THOR HILLS FORMATION: shale; black, rusty, with 10-20% brown sandstone; (sh) shale; (si) siliceous shale (cg) Conglomerate Member: with chert pebbles*

MIDDLE TO UPPER DEVONIAN

DM, DM-u, DM-l	*MISFORTUNE FORMATION: shale, chert; black (u) shale; black, siliceous, white weathering (l) shale; rusty black*

LOWER TO MIDDLE DEVONIAN

DH	*HAILSTONE FORMATION: limestone; clastic, grey-sooty grey, crinoid ossicles with twin axial canals; minor shale; black; minor breccia and conglomerate*

(northeast part of area)

CARBONIFEROUS
PENNSYLVANIAN
TSICHU GROUP (CH-CF)

CF	*FOURWAY FORMATION: calcarenite, calcsiltite; siliceous, white; minor quartzite*

MISSISSIPPIAN

CKC	*KEELE CREEK FORMATION: shale; black calcareous; with limestone*
CHT	*HERITAGE TRAIL FORMATION: quartzite; minor shale*
CH, CH-u, CH-l	*HAWTHORNE FORMATION: (u) shale with limestone (l) shale with quartzite*

DEVONIAN
UPPER DEVONIAN

DIss, DIsh	*IMPERIAL FORMATION: sandstone; quartzose, brown (ss) sandstone (sh1, sh2, sh2a) shale; siliceous, black, white weathering (sh2b) shale; black; minor sandstone*

MIDDLE? TO UPPER DEVONIAN

DC, DC-u, DC-l	*CANOL FORMATION: shale, siliceous shale; black (u) shale; black siliceous white weathering. (l) shale; rusty black*

LOWER TO MIDDLE DEVONIAN

DG	*GRIZZLY BEAR FORMATION: limestone; grey cliff-forming, crinoids with twin axial canals*

Noteable Unconformity - Lower Devonian (Hailstone) breccia rests directly on Lower Silurian (Duo Lake) strata

LOWER PALEOZOIC NORTHEAST OF HESS RIVER (105 - O/9,10,15,16)

ORDOVICIAN AND SILURIAN

OSM	*MARMOT FORMATION: volcanics, basic tuffs, and breccia*

ORDOVICIAN AND SILURIAN
LOWER ORDOVICIAN TO LOWER SILURIAN

OSD	*DUO LAKES FORMATION: shale; black, graptolitic; minor thin bedded limestone*

CAMBRIAN AND ORDOVICIAN
UPPER CAMBRIAN TO LOWER ORDOVICIAN

ЄOR	*RABBITKETTLE FORMATION: limestone; pale yellow weathering, thin-bedded*

CAMBRIAN
MIDDLE CAMBRIAN

ЄH	*HESS RIVER FORMATION: shale; black, calcareous, marked variation in thickness; minor limestone; locally all chert*

CAMBRIAN
LOWER TO MIDDLE CAMBRIAN

ЄS, ЄS-u, ЄS-l	*SEKWI FORMATION: (u) limestone, and slope breccia; ridge-forming, thin bedded (l) limestone, silty limestone, shale and siltstone; recessive, thin bedded*

PROTEROZOIC AND CAMBRIAN
UPPER PROTEROZOIC TO LOWER CAMBRIAN

PЄB	*BACKBONE RANGES FORMATION: quartzite; red-brown, grey-green, massive or laminated, blocky; minor siltstone, maroon weathering*

SOUTHEASTERN FACIES (105-O/8,9)

DEVONIAN AND SILURIAN
UPPER SILURIAN TO LOWER DEVONIAN

SDS	*SAPPER FORMATION: limestone; silty, buff weathering; shale; black; includes volcanic units south of map-area*

SILURIAN

SS	*STEEL FORMATION: argillite; rusty to green buff; minor black shale and chert and prominent bed of bright orange weathering dolostone*

ORDOVICIAN AND SILURIAN
LOWER ORDOVICIAN TO SILURIAN

OSD	*DUO LAKES FORMATION: shale; black, graptolitic; minor thin-bedded limestone*

CAMBRIAN AND ORDOVICIAN
UPPER CAMBRIAN TO LOWER ORDOVICIAN

ЄOR	*RABBITKETTLE FORMATION: limestone; pale yellow weathering, thin-bedded; minor black shale*

CAMBRIAN
MIDDLE CAMBRIAN

ЄH	*HESS RIVER FORMATION: shale; black, calcareous, marked variation in thickness; minor limestone; locally all chert*

CAMBRIAN
LOWER TO MIDDLE CAMBRIAN

ЄS	*SEKWI FORMATION: limestone, and slope breccia; ridge-forming, thin bedded*
ЄG, ЄK	*GULL LAKE FORMATION: argillite; buff, green; minor units of shale, chert, quartzite, limestone and volcaniclastic rocks (Gv where volcanics are abundant) (K) Keele Member: limestone; conglomerate and breccia*

PROTEROZOIC AND CAMBRIAN
UPPER PROTEROZOIC TO LOWER CAMBRIAN
HYLAND GROUP (PЄNS - PЄNA)
NARCHILLA FORMATION (PЄNS - PЄNA)

PЄNA	*Arrowhead Lake Member: argillite; maroon and pale green; minor quartzite, conglomerate, limestone. Lower Cambrian in map-area but ranges into Proterozoic in other parts of Selwyn Basin*
PЄNS	*Senoah Member: argillite; grey, green, buff; minor thick units of quartzite and quartz-pebble conglomerate; also minor units of limestone and silty limestone*

COMBINED UNITS

PALEOZOIC

Pu	*Paleozoic strata, undivided*

CAMBRIAN TO SILURIAN
MIDDLE CAMBRIAN TO LOWER SILURIAN

ЄSHRD	*HESS RIVER, RABBITKETTLE AND DUO LAKE FORMATIONS, undivided*

MIDDLE CAMBRIAN TO LOWER SILURIAN

ЄSHD	*HESS RIVER AND DUO LAKE FORMATIONS, undivided*

CAMBRIAN AND ORDOVICIAN
MIDDLE CAMBRIAN TO LOWER ORDOVICIAN

ЄOHR	*HESS RIVER AND RABBITKETTLE FORMATIONS, undivided*

PROTEROZOIC AND CAMBRIAN
UPPER PROTEROZOIC TO LOWER ORDOVICIAN

PЄNA+ЄG	*Undivided tectonic complexes of Gull Lake Formation and Arrowhead Lake Member, Narchilla Formation*
PЄN	*NARCHILLA FORMATION*

Outcrop in covered area . . . . . ×
Geological boundary (defined, approximate, assumed)
Stylized geological boundary
Contact alteration halo
Bedding, top known (horizontal, inclined, vertical, overturned)
Bedding, top unknown (inclined, vertical)
Cleavage (inclined, vertical)
Minor fold (with attitude of axial plane and plunge)
Normal fault (solid circle indicates downthrow side; defined, approximate)
Thrust or reverse fault (teeth indicate upthrust side; defined, approximate)
Thrust or reverse fault (teeth indicate upthrust side; assumed, overturned)
Strike slip fault (arrow indicates relative movement)
Anticline (upright, overturned; arrow indicates plunge)
Syncline (upright, overturned; arrow indicates plunge)
Monoclinal bend, anticlinal
Granitic dyke (Cretaceous)
Veins
Boundary across which geological units are combined
Stratigraphic facies boundary
Stratigraphic section or traverse, available from author on request
Line of section . . . . . C–C′
Mineral occurence with major element or composition indicated . . . . . × Ba
Fossil, microfossil; GSC catalogue number; abbreviated age (e.g. IDFa - Late Devonian, Famennian) . . . . . Ⓕ C-084650 IDFa
Macrofossils observed but not collected; g-graptolites, s-shelly material, p-vascular plant material, t-trace fossils; abbreviated age (e.g. IDFa - Late Devonian, Famennian) . . . . . ⓕ g IDFa
Microfossil collection taken but sample barren of conodonts

NOTES

1. The prefix "t" designates a map unit that is represented by 70-90% of the stratigraphic unit prefixed, but which is structurally repeated numerous times on small scale, local detachment surfaces. The mapped area can also include fault repetitions, as well as synclinal and anticlinal keels of underlying and overlying stratigraphic units in 10-30% of the area. Units with the "t" prefix are mapped both as single and tectonic units (e.g. SS or tSS).
2. Rogue detachment surface inferred from the observation that strata above are shortened to 20% of their original length while strata below the detachment are shortened to 60-80% of their original length.
3. Folds of this scale and size are observed north of section. Thinning of the tectonic unit PЄNA over PЄNS and older unit anticlines is observed west of section.

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

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Approximate magnetic declination 1996, 30°10′ East, decreasing 14.1′ annually

Elevations in metres above mean sea level

LOCATION MAP

MAP 1901A

GEOLOGY

ELMER CREEK

(and part of NTS 105-O/7)

YUKON TERRITORY

Scale 1:50 000 - Échelle 1/50 000

Kilometres 1 0 1 2 3 4 Kilomètres

Universal Transverse Mercator Projection / Projection transverse universelle de Mercator
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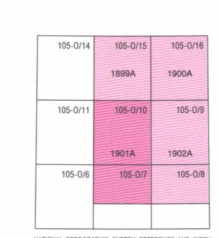

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