

LEGEND QUATERNARY PLEISTOCENE AND RECENT Qb Boulder and blocky debris; poorly sorted Kgr-b,bh Granite; quartz monzonite; (b) with biotite, (bh) with biotite and hornblende UPPER PALEOZOIC NORTHEAST OF HESS RIVER (105 - O/9,10,15,16) SOUTHWESTERN FACIES (105-0/7,10,15) (southwest part of area) (northeast part of area) **CARBONIFEROUS** PENNSYLVANIAN TSICHU GROUP (CH-CF)

KEELE CREEK FORMATION: shale; black calcareous; with limestone CHT HERITAGE TRAIL FORMATION: quartzite; minor shale HAWTHORNE FORMATION: (u) shale with limestone (I) shale with quartzite DEVONIAN UPPER DEVONIAN UPPER DEVONIAN THOR HILLS FORMATION: shale; black, rusty, with 10-20% brown sandstone; (sh) shale; (si) siliceous shale (cg) Conglomerate Member: with chert pebbles IMPERIAL FORMATION: sandstone; quartzose, brown (sh1, sh2, sh2a) shale; siliceous, black, white weathering (sh2b) shale; black; minor sandstone LOWER TO MIDDLE DEVONIAN MIDDLE TO UPPER DEVONIAN MIDDLE? TO UPPER DEVONIAN MISFORTUNE FORMATION: shale, chert; black CANOL FORMATION: shale, siliceous shale; black MISFORTUNE FORMATION: chert; dark grey to black; (u) shale; black, siliceous, white weathering (u) shale; black siliceous white weathering. minor black shale; whiteish weathering (I) shale; rusty black (I) shale; rusty black LOWER TO MIDDLE DEVONIAN LOWER TO MIDDLE DEVONIAN HAILSTONE FORMATION: limestone; clastic, grey-sooty GRIZZLY BEAR FORMATION: limestone; grey cliff-forming, grey, crinoid ossicles with twin axial canals; minor rinoids with twin axial canals shale; black; minor breccia and conglomerate

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)

orange weathering dolostone **ORDOVICIAN** ORDOVICIAN AND SILURIAN ELMER CREEK FORMATION: (u) chert and siliceous shale; black, graptolitic; (I) chert, siliceous argilite; grey, upper part bioturbated; minor limestone OSM MARMOT FORMATION: volcanics, basic tuffs, and breccia CAMBRIAN TO SILURIAN LOWER CAMBRIAN TO SILURIAN OLD CABIN FORMATION: basic volcaniclastics, breccias, lapilli tuff, flows, sills, dykes; minor sedimentary rock units

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

STEEL FORMATION: argillite; rusty green to buff; minor black shale and chert, and prominent bed of bright

DEVONIAN

PROTEROZOIC AND CAMBRIAN UPPER PROTEROZOIC TO LOWER CAMBRIAN HYLAND GROUP (PY - P€NA) NARCHILLA FORMATION (PENS - PENA) Arrowhead Lake Member: argillite; maroon and pale green; Senoah Member: argillite; grey green buff; minor, thick units of quartzite and quartz-pebble conglomerate; also minor units of limestone and silty limestone

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

PROTEROZOIC

FOURWAY FORMATION: calcarenite, calcsiltite; siliceous,

white; minor quartzite

ORDOVICIAN AND SILURIAN LOWER ORDOVICIAN TO LOWER SILURIAN DUO LAKES FORMATION: shale; black, graptolitic; minor thin bedded limestone CAMBRIAN AND ORDOVICIAN UPPER CAMBRIAN TO LOWER ORDOVICIAN RABBITKETTLE FORMATION: limestone; pale yellow veathering, thin-bedded

CAMBRIAN MIDDLE CAMBRIAN HESS RIVER FORMATION: shale; black, calcareous, marked variation in thickness; minor limestone; locally CAMBRIAN LOWER TO MIDDLE CAMBRIAN SEKWI FORMATION: (u) limestone, and slope breccia; ridge-forming, thin bedded
(I) limestone, silty limestone, shale and siltstone; recessive, thin bedded

PROTEROZOIC AND CAMBRIAN UPPER PROTEROZOIC TO LOWER CAMBRIAN BACKBONE RANGES FORMATION: quartzite; red-brown,

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

SAPPER FORMATION: limestone; silty, buff weathering;

shale; black; includes volcanic units south of map-area

UPPER SILURIAN TO LOWER DEVONIAN

SOUTHEASTERN FACIES (105-0/8,9)

ORDOVICIAN AND SILURIAN LOWER ORDOVICIAN TO SILURIAN DUO LAKES FORMATION: shale; black, graptolitic; minor thin-bedded limestone CAMBRIAN AND ORDOVICIAN UPPER CAMBRIAN TO LOWER ORDOVICIAN RABBITKETTLE FORMATION: limestone; pale yellow weathering, thin-bedded; minor black shale

DEVONIAN AND SILURIAN

MIDDLE CAMBRIAN HESS RIVER FORMATION: shale; black, calcareous, marked variation in thickness; minor limestone; locally LOWER TO MIDDLE CAMBRIAN SEKWI FORMATION: limestone, and slope breccia; ridge-forming, thin bedded

> GULL LAKE FORMATION: argillite; buff, green; minor units G CK 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 (P€NS - P€NA) NARCHILLA FORMATION (PENS - PENA)

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

Narchilla Formation

Paleozoic strata, undivided

MIDDLE CAMBRIAN TO LOWER SILURIAN

LAKE FORMATIONS, undivided

MIDDLE CAMBRIAN TO LOWER SILURIAN

MIDDLE CAMBRIAN TO LOWER ORDOVICIAN

FORMATIONS, undivided

HESS RIVER AND RABBITKETTLE

UPPER PROTEROZOIC TO LOWER ORDOVICIAN

Undivided tectonic complexes of Gull Lake

Formation and Arrowhead Lake Member,

HESS RIVER, RABBITKETTLE AND DUO

HESS RIVER AND DUO LAKE FORMATIONS,

COMBINED UNITS

Bedding, top known (horizontal, inclined, vertical, overturned) $+\overset{90}{\cancel{>}}\cancel{>}\overset{30}{\cancel{>}}$ Thrust or reverse fault (teeth indicate upthrust side; defined, approximate) Thrust or reverse fault (teeth indicate upthrust side; assumed, overturned)* ♣ Boundary across which geological units are combined . . . Fossil, microfossil; GSC catalogue number; abbreviated age F 🕪 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 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. Mapping south of 63°25' and east of 130°10' from J.G. Abbott, 1983.

3. Section 10 - Fossils (ascending order) C-089110 - MF Barren, sponge spicules, C-089109 - MF Barren, sponge spicules, C-089108 - MF Barren. 4. Section 11 - Fossils (ascending order) C-089053 - F eO, C-089054 - F mO, C-089111 MF eS, C-089090 - F OS, C-089091 - F eS, C-089055 - F eS, C-089092 - F eS.

Compiled from ground traverses by M.P. Cecile (1979, 1980, 1983, 1984, 1985) with assistance by Rob Gibsun (1979), Brian Fisher (1980), Hans Smit (1983), Craig Hart (1984), and Peter Mustard (1985). Helicopter support was given by Northern Mountain Helicopters (1979, 1983, 1984, 1985), Kenting Helicopters and La Verendrye Helicopters (1980). Expediting was provided by Ross River Services. The understanding of the geology was greatly assisted by discussions with J.G. Abbott (DIAND), S.P. Gordey, W.D. Goodfellow (GSC), E. Debicki, B. Robertson (Canadian Nickel), K. Taylor (Hudson's Bay Mining), R. Bailes, P. Hubachek, G. McArthur (Norcen-Ogilvie), and D. Rhodes (Cominco). Fossil determinations are by B.S. Norford, A.W. Norris, T.T. Uyeno, W.H. Fritz (GSC), and R.S. Tipnis (Sugarland, Texas). Digitizing and intial drafting by M. Deuling and P.J. Neelands.

PALEOZOIC

CAMBRIAN TO SILURIAN

CAMBRIAN AND ORDOVICIAN

PROTEROZOIC AND CAMBRIAN

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, Natural Resources

Digital cartography by E. Macey, Geological Survey of Canada (Calgary)

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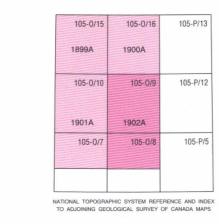
Approximate magnetic declination 1996, 30°13' East, decreasing 14.2' annually Elevations in metres above mean sea level

GEOLOGY KEELE PEAK (and NTS 105-O/9)

YUKON TERRITORY-NORTHWEST TERRITORIES

MAP 1902A

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