

LEGEND

CRETACEOUS

UPPER CRETACEOUS

FORT ST. JOHN GROUP

- KD** DUNVEGAN FORMATION: Light grey to buff sandstone, massive or crossbedded; subordinate pebble conglomerate, dark grey silty shale, and coal.

LOWER CRETACEOUS

- KSu** SULLY FORMATION: Dark grey shale and siltstone with sideritic concretions; silt content higher in upper part.
- KSk** SIKANNI FORMATION: Greenish grey sandstone, siltstone, and shale; sandstone is thick-bedded, commonly calcareous or glauconitic, typically finely laminated and crosslaminated.
- KL** LEPINE FORMATION: Dark grey mudstone with concretions, silty shale, and black fissile shale; lower part of unit abundantly fossiliferous.
- KSc** SCATTER FORMATION: Resistant, greenish-grey, glauconitic, laminated sandstone; medium- to thick-bedded; silty, concretionary mudstone common in middle part of unit.
- KGr** GARbutt FORMATION: Grey shale and siltstone with sideritic concretions; minor thin-bedded, finely laminated sandstone; may include the Chinkeh Formation where that unit is too thin to map separately.
- KCh** CHINKEH FORMATION: Chert-pebble conglomerate overlain by bioturbated quartz arenite with variable chert content, and argillaceous siltstone; woody or plant debris common.

PERMIAN

ISHBEL GROUP

- Pf** FANTASQUE FORMATION: Dark grey to white, well bedded, spiculate chert; rusty weathering, rhythmically interbedded with minor shale and siliceous siltstone.
- PI** Tika map unit: Buff weathering, light to medium brown, silty and sandy limestone or dolomite grading into calcareous siltstone and sandstone; subordinate lithoclast breccia and shale; medium bedded, massive to crosslaminated; sparsely fossiliferous; western occurrences rhythmically bedded; rectilinear fracture pattern characteristic.

LOWER CARBONIFEROUS

MATTSOON FORMATION

- CM-u** UPPER MEMBER: Light to medium grey, fine- to coarse-grained, locally calcareous or dolomitic quartz arenite and sub-chert arenite; subordinate fossiliferous limestone, dolomite, and grey to green shale; sandstone commonly shows large-scale crossbedding; fossils in the limestone are commonly silicified; may include Tika map unit.
- CM-m** MIDDLE MEMBER: Grey to buff to brown, poorly- to well-indurated, fine-grained quartz arenite with subordinate siltstone and dark shale; minor coal and sandy dolomite; sandstone shows fine- to large-scale crossbedding; typically forms sharp-based, thick-bedded, lining-up sequences.
- CM-l** LOWER MEMBER: Greyish-orange weathering, light grey or buff, well-indurated, fine- to very fine-grained quartz arenite interbedded with siltstone and dark grey shale; minor coal, dolomite, and lithoclast breccia; crosslaminated and trace fossils common; typically thin- to medium-bedded with coarsening-up sequences; western occurrences turbiditic.

DEVONIAN AND CARBONIFEROUS

- DCBR** BESA RIVER FORMATION: Dark grey to black shale, locally weathers buff; sparsely fossiliferous; minor interbedded greyish- orange weathering sandstone, siltstone.

MAP SYMBOLS

- Geological boundary (defined, approximate, assumed)
- Outcrop stations
- Outcrop; remote observation
- Bedding (vertical, horizontal, inclined, overturned, estimated)
- Crossbedding (dip direction and dip; uncorrected)
- Joints
- Fractures
- Anticline (defined, approximate, assumed)
- Syncline (defined, approximate, assumed)
- Overturned anticline (defined, approximate, assumed)
- Overturned syncline (defined, approximate, assumed)
- Anticlinal kink fold - (defined, approximate, assumed) (See diagram below)
- Synclinal kink fold - (defined, approximate, assumed) (See diagram below)
- Overturned anticlinal kink - limbs dip in opposite direction (certain, approximate, assumed)
- Overturned synclinal kink - limbs dip in opposite direction (certain, approximate, assumed)
- Fault, thrust (approximate, assumed)
- Fault, unknown type (defined, approximate) (U on upthrown side, D on downthrown side)
- Stratigraphic section location (long, short)

FOLD SYMBOLOLOGY

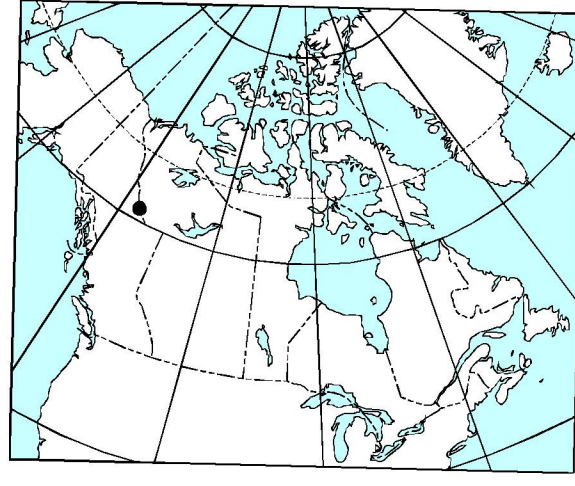
Cross-section view: double arrows are used to indicate folds where the dip direction changes across the hinge, and single arrows are used where the dip direction remains the same across a hinge (see Stockmal et al., 2002).

STRATIGRAPHIC SECTIONS

SECTION	NOTES
1. Section 1	Lower Cretaceous (upper part, top approx.) D. F. Stott (Stott, 1960)
2. L8; 2001G	Chinkeh Fm. D.A. Leckie (Leckie et al., 1991); D. Jowett (unpublished data, 2001)
3. L12	Chinkeh Fm. D.A. Leckie (Leckie et al., 1991)
4. 2001F	Garbutt and Scatter Fms. D. Jowett (unpublished data, 2001)
5. 2001H	Chinkeh Fm. D. Jowett (unpublished data, 2001)
6. 2001H	Scatter Fm. D. Jowett (unpublished data, 2001)

References:

- Leckie, D.A., Potocki, D.J., and Visser, K., 1991: The Lower Cretaceous Chinkeh Formation: A frontier-type play in the Liard Basin of Western Canada, *American Association of Petroleum Geologists Bulletin*, v. 7 no 8, p. 1324-1352.
- Stockmal, G.S., Kubli, T.E., Currie, L.D., and McDonough, M.R., 2002: Map symbology and analysis of box and polycylindrical folds, with examples from the Rocky Mountain Foothills of northeastern British Columbia and the Liard Ranges of southeastern Yukon Territory and southwestern Northwest Territories, *Canadian Journal of Earth Sciences*, vol. 39, pp. 145-155.
- Stott, D. F., 1960: Cretaceous Rocks in the region of Liard and Mackenzie Rivers, Northwest Territories; *Geological Survey of Canada Bulletin* 63, 36p.



NATMAP CARTNAT
Canada's National Geoscience Mapping Program
Le Programme national de cartographie géoscientifique du Canada

GEOLOGY
CHINKEH CREEK (95C/9)
NORTHWEST TERRITORIES - YUKON TERRITORY

Scale 1:50 000 Echelle 1/50 000
Kilometres 1 0 1 2 3 Kilometres

OPEN FILE DOSSIER PUBLIC 1674

GEOLOGICAL SURVEY OF CANADA
COMMISSION GÉOLOGIQUE DU CANADA

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95C/7 Brown Lake GSC Open File 4267	95C/8 Babiche Mountain GSC Open File 1563	95B/5 Fisherman Lake GSC Open File 4161

Geological compilation by L.S. Lane and K.M. Fallas, 2002

based on fieldwork by: L.D. Currie, T. E. Kubli, M.R. McDonough, 1995-97; L.S. Lane, K.M. Fallas, A.K. Khudoley and L.C. Pigge 2000-2002

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THIS MAP IS A PRODUCT OF THE CENTRAL FORELAND NATMAP PROJECT

Geological cartography by: S.J. Hinds, Geological Survey of Canada

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

Base map at the same scale published Surveys and Mapping Branch in 1971

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