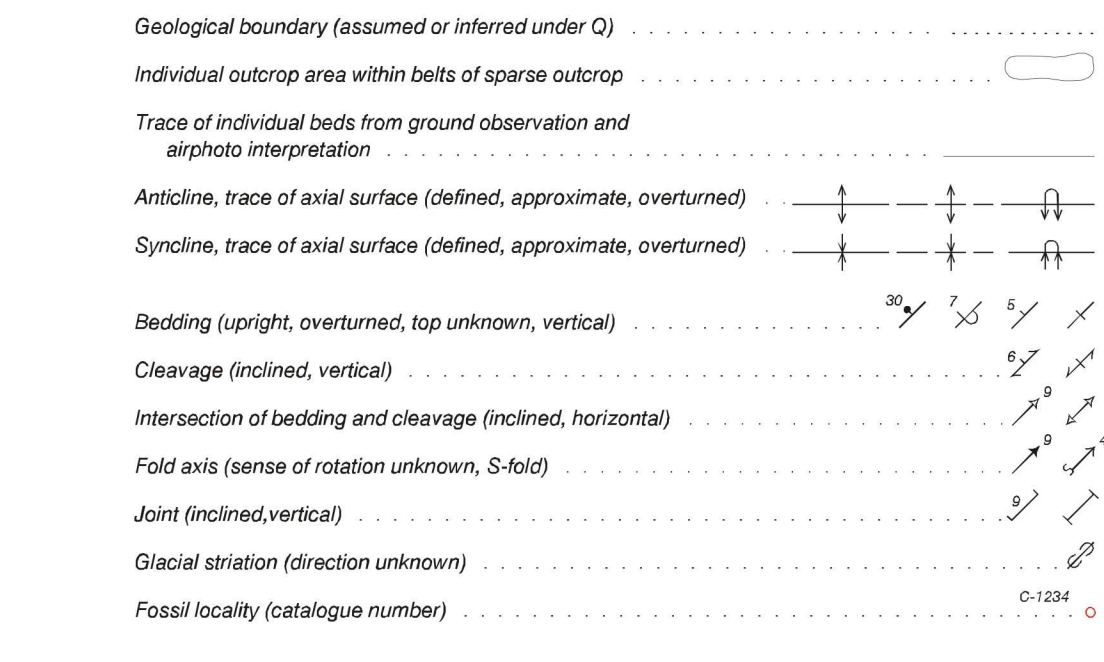


CEENOZOIC	QUATERNARY	PLEISTOCENE AND RECENT	Q	Glacial fill, alluvium, colluvium; unit designators in parentheses are the inferred underlying bedrock units.
	JURASSIC	UPPER MIDDLE TO UPPER JURASSIC	JBRA	BOWSER LAKE GROUP RITCHIE-ALGER ASSEMBLAGE (submarine fan assemblage): sandstone, siltstone, and rare conglomerate; approximately equal proportions of siltstone intervals, up to 50 m thick, dominated either by siltstone, shale, and very fine-grained sandstone, or by medium-grained sandstone; siltstone and/or fine-grained sandstone is dark grey- and black-weathering; sandstone is medium- and light-grey-weathering; abundant turbidite features (e.g. Bouma cycles, flame structures, flute-and-groove casts); conglomerate includes debris-flow units; marine fossils.



DESCRIPTIVE NOTES

This open file replaces Open File 3225 (Evenchick, 1998). It incorporates the new stratigraphic terminology of the Bowser Lake Group. Files used to create this map will be available in digital format for use with GIS and database programs.

Beneath the extensive Quaternary cover, bedrock in the Brown Bear map area is sandstone and siltstone of the Jurassic to Early Cretaceous Bowser Lake Group. Sandstone occurs as thin to thick beds of medium- to fine-grained lithic to arkosic arenite. Forming resistant weathering sheets tens of metres thick, siltstone to silt-rich mudstone (locally pyritic) occurs as laminated and massive units up to tens of metres thick and at the tops of fringing gullies in dominantly sandstone units. Common sedimentary structures are normal grading, flute casts, grooves, cross-lamination, ripple casts, and transverse folds. Sedimentary structures and the overall succession are the basis for interpretation of these strata as turbidites. Strata are similar to those in Cranberry River area (Evenchick and Mustard, 2006). Interpretation of the structure results in an estimate of 1500 m for the maximum thickness of the turbidites (Evenchick and Mustard, 1998). These strata are part of a large belt of turbiditic rocks in the western Bowser Basin known as the Ritchie-Alger assemblage of the Bowser Lake Group (Evenchick et al., 2004; Evenchick and Thorsen, 2005).

The structure is dominated by northwest-trending, gently plunging, chevron-style folds of tens to several hundreds of metres wavelength. Folds are upright, except in the northeast where they are overturned to the northeast. The structures are continuous with, and similar to, those in Cranberry River area. Cleavage is common in siltstone and rare in sandstone. The grade of metamorphism is sub-greenschist facies.

Most bedrock is covered by poorly sorted surficial deposits, mainly till. These deposits are up to tens of metres thick in the lowest elevations of the map area, and variably thinner over most of the rest of the area below treeline. Laminations in areas covered mainly by surficial deposits are shown on the map by grey lines. Northwest-trending ones are parallel with bedrock structure, and locally define folds on trend with folds observed in outcrop. Therefore, although surficial deposits cover most of the area, they are relatively thin in many areas and the dominant (northwest) topographic grain appears to be controlled by bedrock structure. Regularly spaced north-trending lineaments in the vicinity of Swan Lake and spatially to the north and south reflect unimproved topography. Northwest-trending lineaments may be related to a common joint set in the bedrock which is perpendicular to fold axes ("a-c" joints). Some of these appear to offset the northwest-trending lineaments.

REFERENCES

Evenchick, C.A., 1998. Geology, Brown Bear Lake, British Columbia; Geological Survey of Canada, Open File 3225, scale 1:50 000.

Evenchick, C.A. and Mustard, P.S., 1998. Bedrock geology of north-central and west-central Nass River map area, British Columbia; in Current Research 1996-A, Geological Survey of Canada, p. 45-56.

2006. Geology, Cranberry River, British Columbia; Geological Survey of Canada, Open File 5303, scale 1:50 000.

Evenchick, C.A. and Thorsen, D.J., 2005. Geology of the Spuzzan River map area, north-central British Columbia; Geological Survey of Canada, Bulletin 577.

Evenchick, C.A., Mustard, P.S., Woodsworth, G.J., and Ferri, F., 2004. Compilation of geology of Bowser and Sault basins (dropped on shaded relief map, north-central British Columbia); Geological Survey of Canada, Open File 4638, scale 1:50 000.

Geology by C.A. Evenchick and P.S. Mustard (1995)

Map compilation by C.A. Evenchick and P.S. Mustard (1995, 2005)

Digital geological cartography by C.I. Wagner, Earth Sciences Sector Information Division (ESS Info), C.A. Evenchick and D. McKee, Geological Survey of Canada

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

Digital base map from data compiled by Geomatics Canada modified by ESS Info

Mean magnetic declination 2006, 21°45' E, decreasing 18.0' annually

Elevations in feet above mean sea level

Contour interval 100 feet

OPEN FILE 5302
GEOLOGY
BROWN BEAR LAKE
BRITISH COLUMBIA
Scale 1:50 000 / Échelle 1/50 000

Universal Transverse Mercator Projection
North American Datum 1927
© Her Majesty the Queen in Right of Canada 2006

Projection transversale universelle de Mercator
Système de référence géodésique nord-américain, 1927
© Sa Majesté la Reine du chef du Canada 2006



104A/3	104A/2	104A/1
103P/14	103P/15	103P/16
103P/11	103P/10	103P/9

NATIONAL TOPOGRAPHIC SYSTEM REFERENCE GRID
TO ACCOMPANY GEOLOGICAL SURVEY OF CANADA MAPS

OPEN FILE DOSSIER PUBLIC
5302
GEOLOGICAL SURVEY OF CANADA / COMMISSION GÉOLOGIQUE DU CANADA
2006

Open file are products that have not gone through the public information process.

Les dossiers publics sont des produits qui n'ont pas été soumis au processus officiel de publication de l'IGCC.