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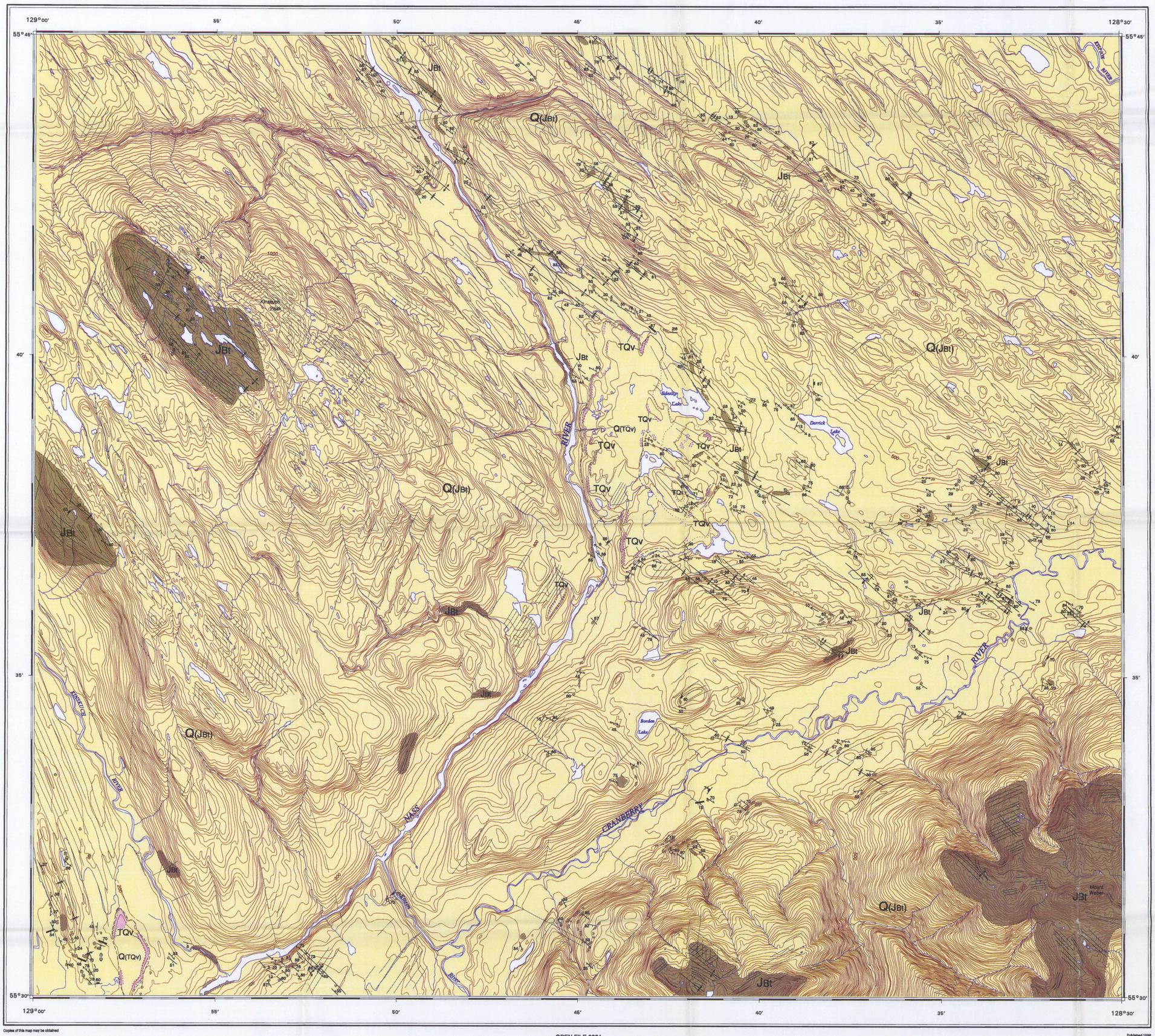
GEOLOGICAL SURVEY OF CANADA / COMMISSION GÉOLOGIQUE DU CANADA



LEGEND

QUATERNARY

PLEISTOCENE AND RECENT

CENOZOIC

Q — *Glacial till, alluvium, colluvium, and fluvial deposits; Q(JBt) and Q(TQv): areas presumed to be underlain by JBt and TQv respectively*

UPPER TERTIARY OR QUATERNARY

TQ — *Basalt or andesite flows; minor flow breccia; rocks commonly feldspar-phyric, vesicular and columnar jointed*

MESOZOIC

JURASSIC

MIDDLE TO UPPER JURASSIC

BOWSER LAKE GROUP (JBt)

Jbt — *Medium to fine grained lithic to arkosic arenite, and siltstone to silt-rich mudstone (locally pyritic); turbidites*

Geological boundary (defined, approximate, assumed or inferred under Q)

Trace of individual beds from ground observation and airphoto interpretation

Linear features in Q, reflecting bedrock and glacial features (see notes)

Anticline, trace of axial surface (defined, approximate, overturned)

Syncline, trace of axial surface (defined, approximate, overturned)

Bedding (inclined, overturned, top unknown, vertical)

Cleavage (inclined, vertical)

Intersection of bedding and cleavage (inclined, horizontal)

Joints (inclined,vertical)

Glacial striations (direction unknown, direction known)

Dykes

NOTES

Beneath the extensive Quaternary cover, bedrock in Cranberry River map area consists of siltstone of the Jurassic to earliest Cretaceous(?) Bowser Lake Group and volcanic rocks of the Tertiary (Pliocene) or Quaternary age. Sandstone occurs as thin to thick beds of medium to fine grained arkosic arenite (locally muscovite-bearing), forming resistant weathering sheets tens of metres thick to silt-rich mudstone (locally pyritic) occurs as laminated and massive units up to tens of metres thick the tops of fining upward beds in dominantly sandstone units. Locally siltstone forms a unit several hundred of hundred metres thick. Common sedimentary structures are normal grading, flute casts, groove lamination, rip-up clasts, and synsedimentary folds. Sedimentary structures and the overall geometry are the basis for interpretation of these strata as turbidites. Strata and structural geometry are similar to Brown Bear Lake area (Evenchick and Mustard, 1996; Evenchick, 1996). Interpretation of these results in an estimate of 1500 m for the minimum thickness of the turbidites.

Structure in the turbidites is dominated by northwest-trending, gently plunging, chevron folds ranging to several hundreds of metres wavelength. Folds are upright, overturned to the northeast and recumbent the southwest. Folds in the southwest corner of the map trend more northerly than elsewhere, reflecting a transition to northeast-trending structures which dominate farther southwest (Evenchick and Mustard, 1996). Cleavage is common in siltstone and rare in sandstone. The grade of metamorphism is sub-greenschist facies. .

The youngest consolidated rocks in the map area are basalt or andesite lava flows exposed in the The columnar-jointed flows tend to form conspicuous cliffs in areas of otherwise low relief. These appear to be erosional remnants of originally much more extensive flows that were extruded onto a paleovalley surface at elevations up to about 150 m above the present Nass River level. The undeformed but are locally glacially grooved, striated, and covered with glacial deposits. The extensive erosion, and lack of deformation, suggest a Pliocene or Quaternary age for the volcanics.

Most bedrock is covered by poorly sorted surficial deposits, mainly till. These deposits are generally thick in the lowest parts of the map area, and variably thinner over most of the rest of the area. Lineaments in areas covered mainly by surficial deposits are shown on the map by grey lines. Most trending ones are parallel with the dominant topographic grain in the north half of the area, and are, with, and inferred to be controlled by, bedrock structure. Regularly spaced north-trending lineaments in north-central map area, and northeast-trending ones in the northwest and central part of the area, drumlinized topography. Other wider and irregularly spaced northeast-trending lineaments may be a common joint set which is perpendicular to fold axes ("a-c" joints). Widely spaced, east lineaments are several kilometres long and have significant topographic expression; their origin

REFERENCES

Evenchick, C.A.
1996: Geology, Brown Bear Lake, British Columbia (103P/15); Geological Survey of Canada, Open File 3225, scale 1:50 000.

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

Geology by C.A. Evenchick and P.S. Mustard, with the assistance of R.M. Hunt and K. Holm (1995), and contributions from G.J. Woodsworth

Map compilation by C.A. Evenchick, 1995

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

Digital base map from Geomatics Canada published at the same scale
Generalized and modified by the Geological Survey of Canada

Copies of the topographical edition of this map may be obtained from the Canada Map Office, Natural Resources Canada, Ottawa, Ontario

Digital geological cartography by C.A. Evenchick and D. M

Electrostatic plot produced by the Geological Survey of Canada

Magnetic declination 1995, 24° 46′ East, decreasing 9.3′ West

Elevations in metres above mean sea level

Contour interval 20 metres

Contour lines and drainage do not match western and southern map due to datum conversion from NAD83 to NAD27

Copies of this map may be obtained from the Geological Survey of Canada:
601 Booth Street, Ottawa, Ontario K1A 0E8
100 West Pender Street, Vancouver, B.C. V6B 1R8

LOCATION MAP

Canada

OPEN FILE 3224

GEOLOGY

CRANBERRY RIVER

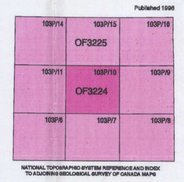
BRITISH COLUMBIA

Scale 1:50 000 - Échelle 1/50 000

Kilometres 1 0 1 2 3 4 Kilomètres

Transverse Mercator Projection / Projection transverse de Mercator

Published 1996



NATIONAL TOPOGRAPHIC SYSTEM REFERENCE AND INDEX TO AJOURNING GEOLOGICAL SURVEY OF CANADA MAPS

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3224
GEOLOGICAL SURVEY OF CANADA
COMMISSION GÉOLOGIQUE DU CANADA
OTTAWA
02/1996

Recommended citation:
Evenchick, C.A.
1996: Geology, Cranberry River, British Columbia (103P/10); Geological Survey of Canada, Open File 3224, scale 1:50 000