

Copies of this map may be obtained from the Geological Survey of Canada, 601 Booth Street, Ottawa, Ontario K1A 0E8. 3000-300 Street, N.W., Calgary, Alberta T2L 2A7. 100 West Pender Street, Vancouver, B.C. V6B 1R6.

Geology compiled by Dirk Tempelman-Kluit, 1985, 1986, from sources referenced with new fieldwork during 1983, 1984. I acknowledge the excellent help in compilation by J. Rhodes, A. Jung, R.A. Arnold, E.A. Fuller, and G. Lynch. By his continuing interest in the geology of this region, Rick Meyers of the British Columbia Geological Survey at Kamloops, encouraged me to complete this work.

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Colour separations were obtained by camera from author's hand coloured manuscript map; colours of some units may appear similar.

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

MAP 1736A
GEOLOGY
PENTICTON
WEST OF SIXTH MERIDIAN
BRITISH COLUMBIA

Scale 1:250 000 - Échelle 1/250 000

Universal Transverse Mercator Projection / Projection transversale universelle de Mercator

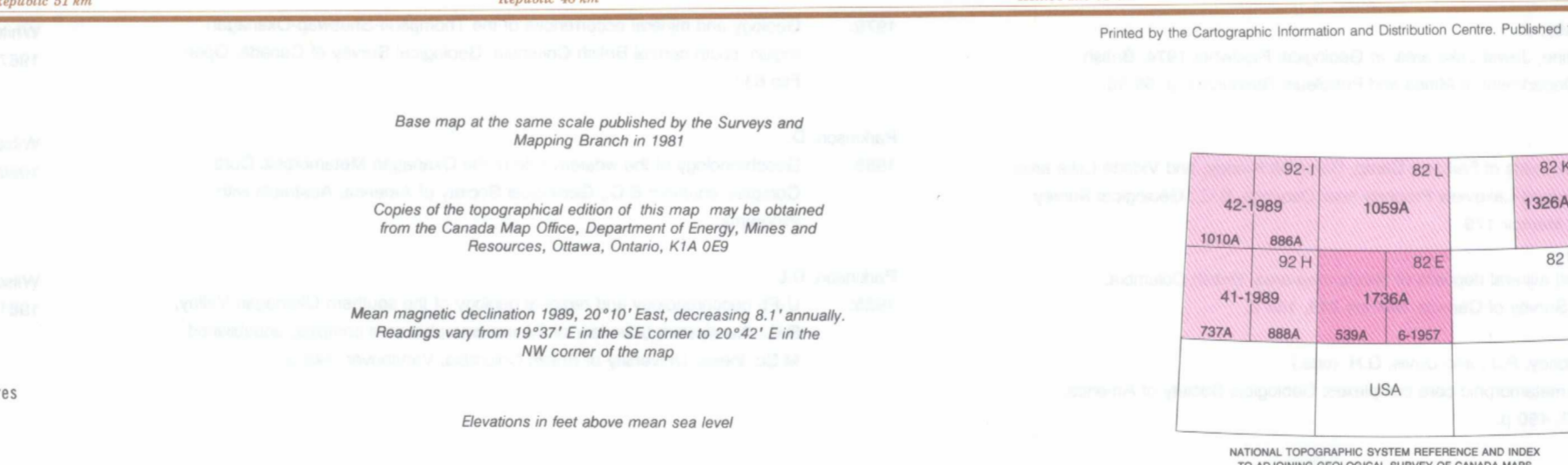
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Base map at the same scale published by the Surveys and Mapping Branch in 1981.

Copies of the topographical edition of this map may be obtained from the Canada Map Office, Department of Energy, Mines and Resources, Ottawa, Ontario, K1A 0E8.

Mean magnetic declination 1989, 20°10' East, decreasing 5.1" annually. Readings vary from 17°37' E at the SE corner to 20°42' E at the NW corner of the map.

Elevations in feet above mean sea level



UNITARY
PLEISTOCENE
QPI LAMBY CREEK BASALT: rusty weathering black basalt, with hornblende, biotite and pyroxene phenocrysts to 5 mm in an aphanitic black matrix occurs as columnar jointed flows, a few metres thick above Mesozoic strata. K-Ar age of 0.762 Ma determined by Church, 1981.

MIOCENE
mTv PLATEAU BASALT: andesite and basalt with augite and hornblende phenocrysts to 5 mm in a black aphanitic matrix. Forms massive flows to 20 m thick locally underlain by poorly sorted boulder conglomerate and pebbly sandstone. K-Ar cooling ages of 2.9 and 14.9 Ma. Includes Deves Creek Basalt (14.9 Ma) and Carrot Mountain alkali basalt (11.8 Ma).

Eocene
Eor OLALLA RHYOLITE: rhyolite breccia, massive obsidian and related dykes.

MARRON GROUP
Ema Undifferentiated andesite, dacite and trachyte of the Marron Group; may include minor andesitic rocks equivalent to Ewl and Eas.

ESKHA FORMATION
Es brecciated greenstone (Old Tom Formation), brecciated chert (Shoemaker Formation, ESt), and brecciated granite (Oliver Granite, EOl) resting as fault slices hundreds of metres across, above the White Lake Formation on gently dipping faults. Includes undifferentiated polymictic fanglomerate and arkose resting unconformably on these brecciated rocks. Near Rock Creek includes heterogeneous epistatic breccia (Kondie Mountain Formation).

WHITE LAKE FORMATION
Ewl massive to thick bedded volcanic breccia and pyroclastic rocks with clasts of Trepamer Rhyolite and Kitley Lake and Yellow Lake formations; includes interbedded medium and thin beds of brown sandstone and clayey siltstone, minor carbonaceous siltstone, minor trachyte and andesite. Palynomorphs from Powers Creek indicate a Middle Eocene or older age.

MARAMA FORMATION
Em medium brownish grey, flow banded dacite with subhedral plagioclase, hornblende and biotite phenocrysts to 5 mm in an aphanitic ground; forms the top of Black Knight Mountain, Mount Boucherie, Annesse Butte, Mount Law.

MARAMA FORMATION-NIMPTI LAKE MEMBER
En recessive, reddish weathering, amygdaloidal, trachyandesite with minor intercalated pyroclastic deposits; includes undifferentiated intrusive equivalents.

KITLEY LAKE FORMATION
Ek massive, yellowish to buff, trachyte to trachyandesite; plagioclase and biotite phenocrysts to 3 to 3 cm (10% of the rock) in a finely crystalline groundmass; includes ash flow tuff and minor mudstone; includes undifferentiated intrusive equivalents. Church determined K-Ar ages between 52.9 (biotite) and 44.2 Ma (whole rocks).

YELLOW LAKE FORMATION
Eyl massive to thick tabular flows of buff to light tan pyroxene-rich, mafic phonolite locally with rhomb anorthoclase phenocrysts and primary anorthite, abundant zeolite feldspar and amygdaloids; includes undifferentiated intrusive equivalents.

TREPAMER RHYOLITE
Etr white and locally pink, greenish or light grey, flow banded rhyolite with subhedral quartz, hornblende and biotite phenocrysts to 3 mm in an aphanitic matrix. K-Ar ages of 47.7 and 46.2 Ma were determined by Church (1981) west of Trepamer.

SPRINGBROOK FORMATION
Estb poorly sorted, massive to thick bedded, immature, coarse boulder and pebble conglomerate. Clasts to 50 cm are rounded, but of low sphericity and are locally derived (chert, greenstone, granite, and other pre-Eocene rocks with fewer Marron Group clasts; mainly Yellow Lake and Kitley formations). Near Rock Creek this unit consists of white to light grey, medium bedded, feldspathic sandstone, siltstone and shale with coaly partings, named the Kettle River Formation.

CORVELL SYENITE
Ec alkalic to calc-alkalic, high level, pink and buff syenite and quartz monzonite and trachyte; pink keldigar porphyry dykes; plutonic equivalent of the Marron Group especially the Kitley Lake Formation; gradational to pulsatite and to Shingle Creek Porphyry; probably includes JKg undifferentiated in East half of map area; poorly dated.

SHINGLE CREEK PORPHYRY
Esc massive, buff and pink, fine grained porphyritic granite and felsite with euhedral phenocrysts of 4 to 6 mm to 10 cm across; occurs as dikes under, and feeders to, the volcanic rocks of the Marron Group, especially the Kitley Lake Formation; a shallow level equivalent of the Corvell Syenite; includes rhomb porphyries and related rocks.

"OKANAGAN GNEISS"
Egn massive, medium grey weathering, resistant hornblende-biotite granulite orthogneiss; strongly foliated; grades to mylonitic gneiss, mylonite and blastomylonite; minor amphibolite and paragneiss; minor schist; minor pegmatite and apatite, strongly chloritized along Okanagan Fault; grades eastward (and up the structural succession) to JKg, mJg and Pm units of which it is presumed as to the sheared equivalent, probably also includes sheared equivalents of the Anarchist Group; presumed sheared and thermally overprinted during the Eocene. Egl-1 quartz chlorite microbreccia and related altered rocks close to the Okanagan Fault.

MELSON PLUTONIC ROCKS
Egng Massive, light grey weathering, biotite granite gneiss and granodiorite gneiss with pegmatite veins and sills.

Hornblende granodiorite: massive, resistant, grey weathering, coarse grained, equigranular mesocratic with euhedral fresh black hornblende crystals; locally weakly foliated; age poorly constrained.

CRETACEOUS AND/OR JURASSIC
JKg OKANAGAN BATHOLITH: massive, light grey weathering, medium- to coarse-grained, equigranular to porphyritic, unfoliated to weakly foliated, fresh biotite granodiorite and granite; includes undifferentiated granodiorites of the Nelson suite; age poorly constrained.

OLIVER PLUTON
Jo massive, unfoliated, medium grained porphyritic biotite granite with weakly foliated, equigranular hornblende granodiorite along the southern border; includes Jod, biotite-hornblende diorite agmatite and Jog, massive garnet-muscovite granite; age poorly constrained.

OSOYOOS GRANODIORITE
Jos recessive, pasty greenish, hornblende granodiorite; pervasively sutured, chloritized, sheared and fractured; age unknown.

MIDDLE JURASSIC
mJg NELSON PLUTONIC ROCKS: massive, generally moderately foliated, medium grey weathering, medium- to coarse-grained, equigranular, hornblende-biotite granodiorite, quartz diorite and granite; includes undifferentiated biotite granite of the Valhalla suite; age poorly constrained.

OLALLA PYROXENITE
mJm black, fresh, massive, medium- to coarse-grained pyroxene, hornblende, serpentinite and peridotite.

KRÜGER SYENITE
Jgd massive, medium grained, biotite hornblende granodiorite with a marginal zone of megacrystic, mesocratic coarse grained hornblende syenite.

Outcrop boundary:
Probable stratigraphic contact, location approximate:
Geological contact, relations unknown, possibly faulted:
Strike and dip of bedding:
Strike and dip of foliation:
Trend and plunge of lineation and minor folds:
Inferred fault, age and displacement unknown:
Inferred normal fault, age unknown, circle on downthrown side:
Inferred Eocene normal fault, circle on downthrown side:
Slide-inferred fault in metamorphosed rocks, roughly parallel to foliation:



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