

Universal Transverse Mercator Projection Projection transverse universelle de Mercator

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**PLEISTOCENE** 

LAMBLY 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

TERTIARY

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 Daves Creek Basalt (14.9 Ma) and Carrot Mountain alkali basalt (11.8 Ma)

OLALLA RHYOLITE: rhyolite breccia, massive obsidian and related dykes

MARRON GROUP Ema Undifferentiated andesite, dacite and trachyte of the Marron Group: may include minor epiclastic rocks equivalent to Ewl and Esb.

SKAHA FORMATION: brecciated greenstone (Old Tom Formation), brecciated chert (Shoemaker Formation, Es1), and brecciated granite (Oliver Granite, Es2) 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

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

heterogeneous epiclastic breccia (Klondike Mountain Formation)

MARAMA FORMATION: 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, Aeneas Butte, Mount Law

MARAMA FORMATION-NIMPIT LAKE MEMBER: recessive, reddish weathering, amygdaloidal, trachyandesite with minor intercalated pyroclastic deposits: includes undifferentiated intrusive equivalents

KITLEY LAKE FORMATION: massive, yellowish to buff, trachyte to

YELLOW LAKE FORMATION: massive to thick, tabular flows of buff to

light tan pyroxene-rich, mafic phonolite locally with rhomb anorthoclase

phenocrysts and primary analcite, abundant zeolite fills cracks and

46 ± 2 Ma were determined by Church (1981) west of Trepanier

trachyandesite; plagioclase and biotite glomerophenocrysts 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)

amygdules: includes undifferentiated intrusive equivalents TREPANIER RHYOLITE: 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

SPRINGBROOK FORMATION: 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

CORYELL SYENITE: alkalic to calc-alkalic, high level, pink and buff syenite and quartz monzonite and trachytic pink feldspar porphyry dykes: plutonic equivalent of the Marron Group especially the Kitley Lake Formation: gradational to pulaskite and to Shingle Creek Porphyry: probably includes JKg undifferentiated in East half of map area: poorly

SHINGLE CREEK PORPHYRY: massive, buff and pink, fine grained porphyritic granite and felsite with euhedral phenocrysts of K-feldspar o 10 cm across: occurs as dykes under, and feeders to, the volcanic rocks of the Marron Group, especially the Kitley Lake Formation: a shallow level equivalent of the Coryell Syenite: includes rhomb porphyries and related rocks

"OKANAGAN GNEISS": massive, medium grey weathering, resistant hornblende-biotite granodiorite orthogneiss: strongly foliated: grades to mylonitic gneiss, mylonite and blastomylonite: minor amphibolite and paragneiss- minor schist: minor pegmatite and aplite: 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: Egn1- quartz chlorite microbreccia and related altered rocks close to the Okanagan Fault

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

OKANAGAN BATHOLITH: massive, light grey weathering, medium- to coarse-grained, equigranular to porphyritic, unfoliated to weakly foliated, fresh biotite granodiorite and granite: includes undifferentiated granodiorite of the Nelson suite: age poorly constrained

OLIVER PLUTON: 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: recessive, pasty greenish, hornblende granodiorite: pervasively saussuritized, chloritized, sheared and fractured; age unknown

NELSON PLUTONIC ROCKS: massive, generally moderately foliated, medium grey weathering, medium- to coarse-grained, equigranular, ornblende-biotite granodiorite, quartz diorite and granite: includes undifferentiated biotite granite of the Valhalla suite: age poorly

OLALLA PYROXENITE: black, fresh, massive, medium- to coarsegrained pyroxenite, hornblendite, serpentinite and peridotite

KRUGER SYENITE: massive, medium grained, biotite hornblende granodiorite with a marginal zone of megacrystic, mesocratic coarse

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Elevations in feet above mean sea level

GEOLOGICAL SURVEY

or "cherty": minor quartzite:minor interbedded argillaceous limestone: includes undifferentiated greenstone lenses

UPPER TRIASSIC AND/OR LOWER JURASSIC ROSSLAND AND NICOLA GROUPS

ORDOVICIAN TO UPPER TRIASSIC

LEGEND

OLD TOM FORMATION: massive andesitic greenstone and greenstone breccia: locally includes large, extensive, strongly silicified equivalents in irregular bodies and lenses with gradational boundaries, which are undifferentiated: includes a few small lenses of undifferentiated limestone: minor diorite: unit is poorly understood: known to contain Ordovician, Carboniferous and Triassic fossils- undifferentiated; relations to Shoemaker Formation are gradational

Massive greenstone, andesite, latite, agglomerate and volcanic breccia

minor interbedded limestone: includes lenses of silicified equivalents:

may include undifferentiated Lower Jurassic volcanics of similar

of greenstone fragments locally with limestone clasts, minor greywacke:

Rusty weathering, black pyritic slate, phyllite and argillite, locally silicified

SHOEMAKER FORMATION: massive, greyish green silicified volcanic rocks, including "cherty" tuff and breccia: includes undifferentiated massive greenstone: may include chert: generally fractured and broken by irregular spaced cleavage: may be largely the silicified equivalent of the Old Tom Formation

INDEPENDENCE FORMATION: massive greenstone-volcanic breccia with greenstone fragments-includes large undifferentiated silicified enses: includes lenses of undifferentiated limestone: resembles the Old Tom and Shoemaker formations

MIDDLE AND LOWER TRIASSIC (?) BROOKLYN LIMESTONE AND "SHARPSTONE CONGLOMERATE": white weathering, thick bedded, light grey limestone commonly with rounded to angular detrital "chert" grains: minor greenish siltstone and massive, resistant, breccia with angular, roughly equant, clasts to 10 cm across, of "chert" and greenstone and locally limestone in a matrix of coarse sand and grit of the same material: grades to "chert" sandstone and "chert" grit by decrease in grain size: minor green and black argillite, partly a fine grained tuff: grains and matrix strongly silicified: "chert" and andesitic greenstone fragments derived mainly from the Knob Hill Group; limestone mostly from the Brooklyn Formation, and locally from the Attwood Group: limestone contains Middle Triassic fossils

CARBONIFEROUS OR PERMIAN KNOB HILL GROUP: massive "chert" (largely silicified greenstone), greenstone and amphibolite: minor limestone or marble: minor sharpstone": age unknown

ATTWOOD GROUP: light grey limestone with minor interbedded chert: contains Carboniferous fossils

**CARBONIFEROUS** 

BLIND CREEK FORMATION: medium bedded grey limestone and calcareous argillite; lacks penetrative fabrics, low greenschist facies

BARSLOW FORMATION: thin bedded, brown, silty slate and argillaceous siltstone: lacks penetrative fabrics, low greenschist facies

CARBONIFEROUS OR OLDER

ANARCHIST GROUP: dark grey weathering, recessive, amphibolite, greenstone, quartz-chlorite schist, quartz-biotite schist, minor erpentinized peridotite: "chert" breccia that resembles Trbc is locally included: CPap- peridotite and serpentinized equivalents: CPaaamphibolite: age unknown

schist, greenstone- minor marble: strongly foliated with penetrative flaser fabrics: age unknown ORDOVICIAN (?) TO DEVONIAN (?)

Schist, thin bedded argillaceous limestone, slate and limestone includes metamorphosed equivalents mostly biotite-diopside-quartz skarn and marble: age unknown

PROTEROZOIC (?) AND PALEOZOIC (?) GRAND FORKS GNEISS

Pgfm Mylonitic biotite leucogranodiorite: Preto unit X

Medium crystalline, well foliated biotite hornblende granodiorite orthogneiss: Preto unit IX

Pgfa Amphibolite, amphibolitic gneiss, minor marble: Preto unit IV

Coarsely crystalline garnet-biotite schist, interfoliated quartzite, minor marble, abundant pegmatite and leucogneiss: Preto unit III

Coarsely crystalline, thick layered quartzite, minor marble and pegmatite:

Sillimanite-biotite-quartz paragneiss, amphibolite and amphibolitic gneiss, marble, biotite schist and gneiss, garnet-biotite-quartz schist, micaceous quartzite: includes minor leuco-orthogneiss:Preto unit l

MONASHEE GNEISS: grey, massive, biotite granodiorite gneiss: gradational westward with Egn, but not overprinted by the Eocene event that affected the rocks nearer the Okanagan Fault: may be equivalent or related to Pgf: may include equivalents of ODs: age unknown

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

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COMMISSION GÉOLOGICHE

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Any revisions or additional geological information known to

the user would be welcomed by the Geological Survey of Canada