UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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GEOLOGIC MAP OF THE MT. BONAPARTE QUADRANGLE, OKANOGAN COUNTY, WASHINGTON

Sheet 2 of 2

EXPLANATION

CORRELATION OF MAP UNITS

Qal, Qt, Qf	Holocene	QUATERNARY
Qd	Pleistocene	QUATERNARY
UNCONFORMITY		
Tvm, Tvr, Ti, Td, Tdf, Tdm, Tal, Ts	Eocene	TERTIARY
UNCONFORMITY		
TKob, TJba, Kogb, Kop, Kpc, TJbm, TJbs, TJbf, Kot, Kog, Komp, JTRoq, Mzi, Mzw, Mzs, Mzb, KJd	JURASSIC, CRETACEOUS or TERTIARY	TERTIARY(?), CRETACEOUS, JURASSIC(?), and TRIASSIC(?)
Trmi, Trib, TRKu, TRKm, TRKg, TRKq, TRKd, TRKl		TRIASSIC OR PERMIAN
UNCONFORMITY		
Psc, Pssl, Ps, Psl, Psd, Psls, Psg		PERMIAN

DESCRIPTION OF MAP UNITS

Qal ALLUVIUM (Quaternary) Chiefly silt, sand, and gravel. Includes peat at Bonaparte Meadows

Qt TALUS (Quaternary)

Qf FAN DEPOSITS (Quaternary) Chiefly silt, sand, and gravel

Qd GLACIAL DRIFT (Pleistocene) Terraced deposits, kames, eskers, and drift as patchy formless mantle. Chiefly silt, sand, and gravel

Tvm MAFIC VOLCANIC ROCKS (Eocene?) Hornblende-bearing-may be trachytic

Tvr FELSIC TO INTERMEDIATE VOLCANIC ROCKS (Eocene) Porphyritic, plagioclase phenocrysts, quartz-bearing

HYPABYSSAL INTRUSIVE ROCKS (Eocene?)

Ti STOCKS AND PLUGS Fine grained diorite, quartz diorite, and granodiorite

Td DIKES Mafic to felsic

Tdf DIKES Felsic

Tdm DIKES Mafic

Tal DIKE (?) Intrusion breccia of fine grained alkalic rocks

Ts SANDSTONE, ARKOSE, SILTSTONE, AND CONGLOMERATE (Eocene?)

ALKALIC COMPLEX OF BIMETALLIC MOUNTAIN (Eocene, Cretaceous, or Jurassic)

TJba ALASKITE Brecciated and hydrothermally altered

TJbm MONZONITE Brecciated, locally includes shonkinite

TJbs SHONKINITE Locally includes malignite, monzonite. Commonly brecciated

TJbf FENITE Metamorphosed greenstone and metasiltstone. Commonly brecciated

TKob BRECCIA (Eocene? or Cretaceous) Chiefly brecciated granodiorite or quartz monzonite

OKANOGAN GNEISS DOME (Cretaceous)

Kogb GNEISSIC GABBRO OR DIORITE Quartz-bearing

Kop PEGMATITE AND PEGMATITE-ALASKITE MIXTURE

Kpc PEGMATITE DIKE COMPLEX Pegmatite-alaskite dikes cutting country rock (phyllite, schist)

Kot TONASKET GNEISS Layered granitoid gneiss, schist, alaskite, and pegmatite

Kog MOUNT BONAPARTE PLUTON Granodiorite and quartz monzonite, gneissose and lineated near Tonasket Gneiss

Komp MONZONITE-SYENODIORITE BORDER PHASE Gneissic; euhedral sphene is conspicuous accessory mineral

KJd FELSITE DIKES AND PIPES (Mesozoic) Quartz porphyry and plagioclase porphyry. Commonly metamorphosed and(or) hydrothermally altered

BUCKHORN MOUNTAIN PLUTON (Mesozoic)

Mzb GRANODIORITE Hydrothermally altered

Mzs SKARN Garnet, magnetite-bearing

Mzw WAUCONDA PLUTON (Mesozoic) Chiefly granodiorite, but composition quite variable. Locally porphyritic. Gneissic to brecciated

Mzi GRANITIC ROCKS (Mesozoic) Brecciated near Okanogan gneiss dome

JTRoq OSOYOOS PLUTON (Triassic or Jurassic) Gneissic quartz diorite

MAFIC INTRUSIVE ROCKS (Triassic or Permian)

Trmi META-DIABASE Fine to medium grained

Trib META-GABBRO Medium grained. Grades through phlebitic greenstone to aphanitic greenstone. Intrusion breccia with cognate xenoliths present locally

KOBAU FORMATION (Triassic or Permian)

TRKu GREENSCHIST Includes greenstone, quartzite (metachert), metasiltstone, and metaconglomerate (at one locality - S.28, T.40 N., R.30 E.)

TRKm MAGNESITE Siliceous, dolomitic. Locally forms replacement deposits and vein fillings, elsewhere forms stratiform deposits at or near base of Kobau Formation

TRKg GREENSTONE Massive, locally porphyritic. Contains interlayers of greenschist, quartzite (metachert), and metasiltstone

TRKq QUARTZITE (METACHERT)

TRKl MARBLE Fine grained, impure

TRKd DOLOMITIC MARBLE Fine grained

SPECTACLE FORMATION (ANARCHIST GROUP) (PERMIAN)

Psc METASILTSTONE Contains interlayers of metaconglomerate (chert sharpstone conglomerate), slate, phyllite. Locally schistose (biotite-garnet-bearing)

Pssl SLATE, ARGILLITE Dark gray to black, locally phyllitic. Contains interlayers of metasiltstone and metaconglomerate

Ps PHYLLITE Bluish gray, limy. Grades locally to staurolite-garnet schist in southeast part of map area (T. 38-39 N., R. 30 E.)

Psl MARBLE Fine grained. Locally dolomitic

Psls MARBLE AND METASILTSTONE Thinly to thickly interlayered

Psg GREENSTONE AND AMPHIBOLITE

Psd DOLOMITIC MARBLE Fine grained

Vertical Inclined (20)

Contact
Approximately located; long dashed where inferred, short dashed where gradational, querried where doubtful, dot-dashed where interfingering

Vertical Inclined (80, D, U, 65)

Fault, Shear Zone
Approximately located; dashed where inferred, querried where doubtful, dotted where concealed, D, downthrown side; U, upthrown side. Inclination noted where observed

Planar and linear features

Symbols may be combined

Inclined (35) Horizontal

Minor fold axis, showing plunge (20)

Axial plane of folds, showing dip and strike of fold axis (35)

Axis of isoclinal fold showing plunge

Inclined (75) Vertical Horizontal Overturned (60)

Strike and dip of beds
Dot indicates top of beds known from sedimentary features

Inclined (20) Horizontal
Lineation, showing plunge

Inclined (80) Vertical Horizontal With lineation
Strike and dip of foliation
Wavy instead of straight lines indicate crenulated or undulating foliation. Plunge of lineation or fold axis not shown where it lies in plane of foliation

Inclined (40) Vertical Horizontal
Strike and dip of foliation and parallel bedding

Strike and dip of mylonite (30)

Inclined (75) Vertical Compound sets (30) En echelon
Strike and dip of joints
Solid box indicates primary sets; slickensides on joint surface indicated by: –, dip slip; ··, strike slip; —, oblique slip (arrow points in direction of plunge projected to horizontal in plane of joint

OTHER FEATURES

Adit or tunnel

Shaft

Prospect pit

Gravel pit

Mineralized fault zone, vein, showing strike and dip (50)

Tunnel driven along mineralized fault zone or vein, showing strike and dip of vein (50)

Area of abundant disseminated pyrite or pyrrhotite (Py)

Placer gold workings

Mineralization (megascopic observation)
Cu Copper
Pb Lead
Zn Zinc
Fe Iron
As Arsenic

Glacial striae

This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards and nomenclature