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SCALE 1:250,000

KILOMETERS

STATUTE MILES

EXPLANATION

Contact---Dashed where approximately located; dotted where concealed.

Fault---Dashed where inferred; dotted where concealed.

Thrust fault---Sawteeth on upper plate; dashed where inferred.

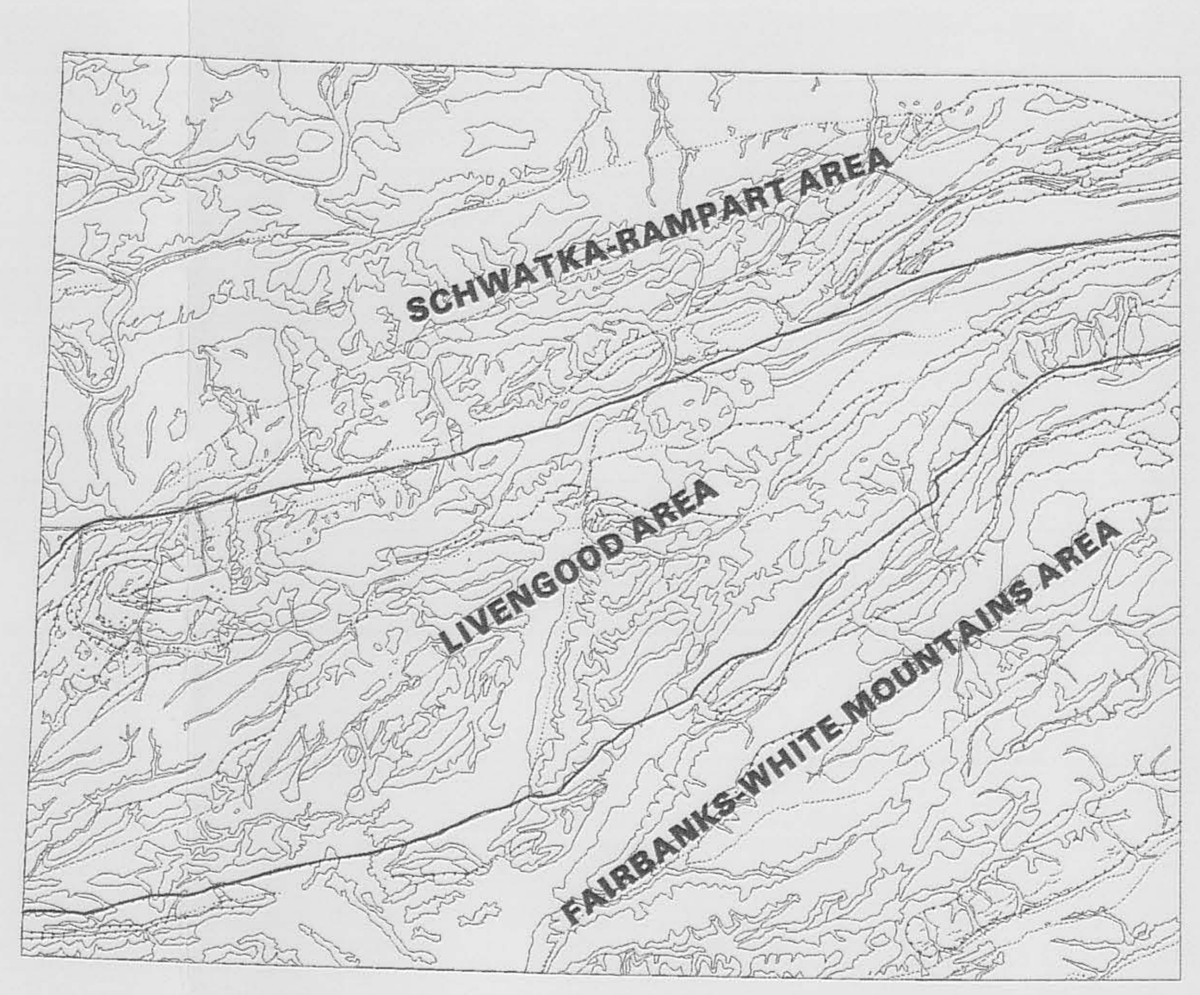
Eclogitic horizons in the Chatanika allochthon.

Dikes, various compositions and ages.

Rock sample locality.

Heavy-mineral concentrate sample locality.

Stream-sediment sample locality.



Three-fold division of Livengood Quadrangle used in this report

DISTRIBUTION AND OCCURRENCE OF GOLD-BEARING SAMPLES IN THE LIVENGOOD QUADRANGLE, ALASKA

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DEFINITION OF MAP UNITS

UNCONSOLIDATED DEPOSITS

Qa Alluvium (Holocene)

Qg Reworked creek gravels in placer mining areas (Holocene)

Qlc Loess and colluvium (Holocene)--Includes minor upland alluvium

Qsu Reworked silt and organic deposits, undivided (Holocene)--Includes swamp deposits

BEDROCK

Schwatka-Rampart area

QTg Gravel, sand, and silt (Holocene to Pliocene?)--Poorly consolidated deposits

Tvs Volcanic and sedimentary rocks, undivided (Eocene)--Conglomerate, sandstone, shale, and basalt

Ka Alaskite (Late Cretaceous)---Exposed at Raven Creek Hill

Rampart Group (Triassic to Mississippian)--Consists of:

TRMrv Volcanic rocks--Intrusive and extrusive mafic igneous rocks; a few intermixed sedimentary rocks

TRMrs Sedimentary rocks--Argillite, chert, graywacke, shale, and limestone

MzPzr Raven Creek Hill unit (Mesozoic or Paleozoic)--Metasedimentary gneiss, mica schist, phyllite, and hornfels

PDms Metamorphic and sedimentary rocks, undivided (Permian? to Devonian?)--Black and greenish-gray siliceous slate, chert, siltstone, debris flows, and greenstone

Schwatka unit (Middle and Early Devonian)--Consists of:

Dsv Mafic volcanic rocks and minor clastic sedimentary rocks

Dsl Limestone

Wickersham unit (earliest Cambrian and Late Proterozoic)-- Unit age ranges into the Hadrynian. Consists of:

Ꞓwl Dark-gray arenaceous limestone

ꞒZwa Maroon and green argillite, grit, quartzite, siltite, graywacke, and phyllite

ꞒZwg Grit, quartzite, phyllite, and slate--Differs from other grit units in that it contains chert. Includes limestone interbeds that lithologically resemble unit Ꞓwl

Livengood area

QTg Gravel, sand, and silt (Holocene to Pliocene)---Poorly consolidated deposits

Tqm Quartz monzonite (Paleocene)--Tolovana Hot Springs pluton

Tm Monzonite(?) or Monzodiorite(?) (Paleocene?)--Northeast of Tolovana Hot Springs pluton

TKm Monzonite (Tertiary and (or) Cretaceous)--Cascaden Ridge pluton

TKg Felsic granitic rocks (Tertiary and (or) Cretaceous)-Small intrusive bodies in the upper Wilber Creek area

Kmo Quartz monzonite, monzonite, and syenite (Late Cretaceous)--Sawtooth, Wolverine, Elephant Mountains, and Huron Creek plutons

Km Minto unit (Late Cretaceous?)--Siltstone, mudstone, graywacke, quartzose sandstone, and plant-fragment-bearing siltstone

Kwc Wilber Creek unit (Early Cretaceous; Albian)--Shale siltstone, graywacke, conglomeratic graywacke, and conglomerate

KJw Wolverine unit (Early Cretaceous and (or) Jurassic)--Quartzite

KJv Vrain unit (Early Cretaceous and (or) Jurassic)--Pyritiferous shale and minor siltstone

TRc Black shale and chert (Triassic)

TRs Calcareous phosphatic shale and limestone (Triassic)--Includes minor calcareous sandstone and granule conglomerate

MzPzp Phyllitic schist, amphibolite, quartzite, and diorite (Mesozoic or Paleozoic)

Ps Sedimentary rocks (Permian)--Argillite, siltstone, sandstone, and minor conglomerate

Pzs Greenish-gray siliceous slate, quartzite, chert, and greenstone (late Paleozoic)

Dq Quail unit (Late Devonian)--Conglomerate, phyllite, calc-phyllite, siltstone, and sandstone. Includes limestone buildups (l) at base of unit

Dt Troublesome unit (Devonian?)--Argillite, chert, and mafic intrusive and extrusive rocks

Dc Cascaden Ridge unit (Middle Devonian)--Shale, siltstone, sandstone, conglomerate, and minor limestone

DSl Lost Creek unit (Devonian and Silurian)--Limestone and varied sedimentary rocks

Old Livengood Dome Chert (Late Ordovician)--Chert and siliceous slate with rare greenstone and limestone

SZa Amy Creek unit (Silurian? to Late Proterozoic?)--Siliceous dolomite, chert, and basaltic greenstone and minor limestone, shale, and siltstone

PzZm Mafic igneous rocks (Paleozoic and (or) Late Proterozoic)--Includes minor interlayered sedimentary rocks

ꞒZum Ultramafic and mafic rocks (Early Cambrian and (or) Late Proterozoic)--Serpentinite and greenstone intruded by gabbro and diorite

Wickersham unit (earliest Cambrian and Late Proterozoic)--Unit ranges into Hadrynian. Consists of:

ꞒZwl Dark limestone--Sparsely or non-arenaceous limestone

ꞒZwa Maroon and green argillite, phyllite, quartzite, graywacke, siltite, and phyllite--Unit is characterized by the relative lack of grit except in the far western part of the quadrangle

Fairbanks-White Mountain area

QTg Gravel, sand, and silt (Holocene to early Tertiary)--Poorly consolidated deposits

Tb Olivine basalt (Tertiary)

Tgp Peraluminous granite (Paleocene)--Cache Mountain pluton

TKg Felsic granitic rocks (Tertiary and (or) Cretaceous)--Vault pluton

Ks Syenite (Late Cretaceous)--Roy Creek stock

Kg Granite (Late Cretaceous)--Pedro Dome and rocks in its vicinity. Intrudes unit Kgd

Kgd Granodiorite (Late Cretaceous)--Pedro Dome and rocks in its vicinity

TRm Mafic igneous rocks (Triassic)--Gabbro and diabase sills and dikes. Intrudes the Globe unit

Mg Globe unit (Mississippian)--Vitreous quartzite, phyllite, and slate

Dcg Chert-pebble conglomerate, graywacke, and slate (Devonian?)

DSt Tolovana Limestone (Middle Devonian to Early(?) Silurian)--Limestone and rare dolomite

Ofv Fossil Creek Volcanics (Late to Early Ordovician)--Alkali basalt, agglomerate, and gabbro. Also includes shale, chert, and limestone, all intruded by gabbro

Pzc Chatanika unit (Paleozoic)--Allochthonous, garnet-bearing quartz-biotite-muscovite schist, and quartzite. Primarily epidote-amphibolite facies rocks, but also includes eclogitic rocks

Wickersham unit (earliest Cambrian and Late Proterozoic)--Unit age ranges into the Hadrynian. Consists of:

ꞒZwa Maroon and green argillite, grit, quartzite, siltite, graywacke, phyllite, and dolomite--Includes thin beds of dark limestone, which are probably equivalent to unit ꞒZwl, as mapped in other areas, but which are areally restricted and are not mapped separately in this area. Intruded by gabbro in and near the White Mountains

Zwg Grit (Late Proterozoic)--Bimodal quartzite and gray and olive-gray greenschist-facies argillite. Unit age is considered to be Hadrynian

Zf Fairbanks schist unit (Late Proterozoic)--Greenschist facies muscovite-chlorite schist, quartzite, and phyllite. Locally, divided into:

Zfc Cleary subunit--Facies characterized by white felsic schist, micaceous quartzite, chloritic or actinolitic greenschist, greenstone, and marble

CORRELATION OF MAP UNITS