

Porphyry Cu-Mo-Au Anomaly 115I 102 Lumby Porphyry Mo (Low F-Type) Polymetallic Veins Ag-Pb-Zn±Au Showing Plutonic Related Au Drilled Prospect Au, Pb, Ag Anomaly Plutonic Related Au Anomaly Anomaly Porphyry Cu-Mo-Au Porphyry Cu-Mo-Au Showing Cu, Mo 15J 019 Colorado Unknown Haxe Polymetallic Veins Ag-Pb-Zn±Au Anomaly Rude Creek Polymetallic Veins Ag-Pb-Zn±Au Showing Au, Pb, Ag, Z J 023 Nordex Polymetallic Veins Ag-Pb-Zn±Au Unknown Porphyry Cu-Mo-Au Anomaly Polymetallic Veins Ag-Pb-Zn±Au Past Producer Pb, Ag, Zr Polymetallic Veins Ag-Pb-Zn±Au Past Producer F Porphyry Cu-Mo-Au Porphyry Cu-Mo-Au Anomaly Cu, Mo Unknown Anomaly Porphyry Cu-Mo-Au Anomaly Porphyry Cu-Mo-Au Porphyry Cu-Mo-Au 15J 070 Marquerite Polymetallic Veins Ag-Pb-Zn±Au Showing Plutonic Related Au Porphyry Cu-Mo-Au 5J 072 Scroggie Anomaly 115J 093 Onasick Showing Polymetallic Veins Ag-Pb-Zn±Au 115J 101 Canadian Creek Porphyry Cu-Mo-Au Drilled Prospect Cu 5J 103 Lost Issac Unknown 115J 104 Gervan Unknown Unknown Au Au-Quartz Veins Podiform Chromite 
**Table 1.** Yukon MINFILE 2010. Yukon MINFILE - A database of mineral occurrences.
 http://www.geology.gov.yk.ca/databases\_gis.html [accessed February 2013]

Au-Quartz Veins

Porphyry Cu-Mo-Au

Porphyry Cu-Mo-Au

115I 032 Phelps Porphyry Cu-Mo-Au Showing Cu

115I 034 Prospector Mountain Polymetallic Veins Ag-Pb-Zn±Au Drilled Prospect Ag

Porphyry Cu-Mo-Au

Porphyry Cu-Mo-Au

115I 081 Kerr Porphyry Cu-Mo-Au Drilled Prospect Cu, Mo

Subvolcanic Cu-Au-Ag (As-Sb) Showing

Epithermal Au-Ag-Cu: High Sulphidation Showing Au

Epithermal Au-Ag-Cu: High Sulphidation Showing Au

Epithermal Au-Ag-Cu: High Sulphidation Showing Au

Unknown

Unknown

Selkirk Volcanics: mafic volcanic flows, subaerial; commonly vesicular, with fresh olivine and xenoliths of peridotite; typically occupies valleys and low-lying

Felsic rocks: tan to cream rhyolite dykes, flows, sills, crystal and ash tuff;

Intermediate to mafic rocks: grey green to mauve andesitic tuff breccia,

Prospector Mountain suite: light grey to pink quartz monzonite dykes, sills

hornblende-phyric; fine- to medium-grained; locally forms matrix of polymictic

Dominantly upper Carmacks Group, locally includes lower Carmacks Group: dark green to dun basalt, basaltic andesite, trachy-andesite and andesite

flows, sills, and tuff-breccia; clinopyroxene-, orthopyroxene-, olivine- and/or

crystal-lithic tuff, and agglomerate, with minor dacite; pale-orange to grey

Clastic rocks: maroon to grey-green conglomerate, laminated sandstone and

eterolithic breccia: matrix-supported; contains clasts of units uKCS2 and

Porphyry: quartz monzonite to dacite; fine to medium grained; alkali feldspar-,

Colorado Creek conglomerate: polymitcic, wherein boulders derived from

Mount Nansen Group: massive aphyric and feldspar-phyric andesite to

Coffee Creek phase: pink to beige biotite monzogranite; medium- to

to coarse-grained; unfoliated to weakly foliated. Commonly contains

hornblende porphyritic diorite enclaves and rare orthoclase megacrysts.

quartz monzonite, and quartz monzodiorite; generally massive to weakly

rocks; augite-phyric; locally well cleaved; may be equivalent to Povoas

foliated, commonly alkali-feldspar porphyritic. Epidote is interpreted as

coarse-grained, characteristically smoky quartz bearing, locally pegmatitic.

Dawson Range phase: white to beige hornblende-biotite granodiorite, lesser

granite, tonalite, quartz diorite, and diorite; blocky hornblende-phyric, medium-

Aishihik suite: white to beige hornblende-biotite granodiorite, monzogranite,

magmatic (prominent) and secondary. Late-phase granitic pegmatite dikes are

Semenof Formation: andesite to dacite volcanic flows, tuff and volcaniclastic

Pyroxene Mountain suite: dark green to black clinopyroxenite, hornblendite,

ornblende pyroxenite, gabbro pegmatite; minor diorite and granodiorite;

typically medium to coarse grained. Hornblendite is locally strongly foliated.

Interpreted to be subvolcanic cumulate of the Semenof Formation.

Sulphur Creek suite: grey to pink alkali feldspar and quartz porphyritic

monzogranite; locally forms the protolith of the felsic Klondike Schist.

beige to light green quartz and feldspar porphyritic felsic volcanic and

schist and phyllonite derived from intermediate to mafic volcanic and

volcaniclastic rocks; pyrite porphyroblasts are common.

Simpson Range suite (MSR1, MSR2)

diorite; highly foliated to gneissic.

Metavolcanic and metasedimentary rocks

volcaniclastic rocks; moderately to strongly foliated; phyllonite and phyllite

derived from the felsic volcanic rocks; may contain highly strained Sulphur Creek suite (PKSC) monzogranite; b) light green mafic to intermediate chlorite

Felsic to intermediate granitoid and orthogneiss: interlayered pink to grey

hornblende-biotite or biotite granodiorite, monzogranite, quartz diorite and

diorite, diorite, gabbro and amphibolite; highly foliated to gneissic.

nafic sills, dykes, flows and volcaniclastic rocks.

Snowcap assemblage (PDSA1, PDSA2)

Intermediate to mafic granitioid and orthogneiss: interlayered dark grey quartz

inlayson assemblage: amphibolite and garnet amphibolite; strongly foliated;

cally deccusate textured; rare relict volcanic tectures; probably derived from

Stevenson Ridge schist: black to grey carbonaceous quartzite, quartz-mica

schist and rare black phyllite; strongly foliated and complexly folded.

Quartzite and schist: grey to white quartzite, micaceous quartzite and

psammitic quartz-muscovite-biotite (± garnet ± aluminosilicates) schist; minor

ndivided ultramafic rocks: harzburgite, dunite, orthopyroxenite, serpentinite, alc-tremolite schist and listwaenite; variably serpentinized, silicified or

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Marble: light grey to white marble; interlayered with siliciclastic rocks; the extent of smaller marble bodies is slightly exaggerated. Difficult to differentiate

arbonatized; occur as 10 to 100 m wide tectonic slivers.

Klondike Schist: Undivided interlayed felsic and mafic metavolcanic rocks: a)

monzogranite; moderately foliated to gneissic; porphyroclastic auger

plugs and dykes. Contains granitic clasts probably derived from

Locally transitional to Dawson Range phase (mKw2).

dacite breccias, flows and tuff; massive heterolithic quartz and feldspar-phyric

felsic lapilli tuff, flow banded quartz-phyric rhyolite; quartz-feldspar porphyry

dominantly metamorphic rocks, Whitehorse suite, and Mount Nansen Group.

Lower Carmacks Group: grey to green weathering andesitic ash and

weathering massive andesite flows; hornblende-, pyroxene- and

mKw2, and metamorphic rocks; intrusive or explosive origin.

nornblende-porphyritic; typically vesicular. Locally interbedded with polymictic

massive flows, dykes and sills; hornblende-plagioclase porphyritic.

and hypabyssal plugs; massive to alkali feldspar-, biotite- and

boulder conglomerate derived from immediate basement.

smoky quartz ± feldspar porphyritic; locally flow-banded.

Rhyolite Creek complex (PRC1, PRC2)

Carmacks Group (uKC1, uKC2, uKC3).

siltstone interlayered with epiclastic sandy tuff.

plagioclase-, biotite- and quartz-porphyritic.

Unit may be a subset of unit uKC3.

consanguineous Whitehorse suite.

Whitehorse suite (mKW1, mKW2)

lagioclase-porphyritic.

Casino suite (uKCS1, uKCS2)

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The northern Stevenson Ridge area is logistically difficult to access and map, and these challenges were largely overcome in summer 2011 by the superb piloting skills of Nathan Healey in the MD500 aircraft of Prism Helicopters Limited. Western Copper and Gold Limited are gratefully acknowledged for hosting our mapping crew at their Casino exploration base camp. Field assistance was capably provided by Neil Beaton, Timothy Davis, Marthe Kloecking, Thomas Kelly, Logan Mills and Julia Pickering. We are grateful to Yukon Geological Survey for sage advice and logistical support. Don Murphy, Maurice Colpron, Steve Israel, and Jeff Bond are thanked for sharing data and engaging in numerous discussions that have contributed to these maps. Several exploration companies have contributed datasets and access to their properties which greatly improved the resolution of this map. Nancy Joyce and Ellie Knight provided exceptional U/Pb geochronological analysis of some complicated rocks, and Brian Jicha provided outstanding Ar/Ar analyses. Murray Allen, Jim Mortensen and Craig Hart of the Mineral Deposits Research Unit (Yukon Gold Project), University of British Columbia, are acknowledged for

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(NORTHEAST PART)

2nd EDITION

Canadian **Geoscience Maps** 

**Preliminary** 

Geomatics and cartography by S.P. Williams and



National Topographic System reference and index to adjoining

published Geological Survey of Canada maps

SBN 978-1-100-22042-0

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DESCRIPTIVE NOTES

INTRODUCTION

Ryan (2005) and Ryan et al. (2010)

Yukon-Tanana Terrane

GEOLOGICAL FRAMEWORK

area to the north (Gordey and Ryan, 2005).

netamorphosed equivalents of mafic sills and dykes are also common

assemblage (eg., Gordey and Ryan, 2005; Ryan et al., 2010).

between the Semenof Formation and the YTT in this map area.

by a shear zone that separates it from the Jurassic Walhalla Creek pluton of the Aishihik suite (unit EJA).

superimposed on the older Paleozoic basement and early Mesozoic arc (Stikinia-Quesnellia).

coincident with and possibly controlled by an older, crustal-scale structure such as the Moose Creek thrust.

dotted with lozenges of harzburgite, and is interpreted as being post-Late Triassic, and pre-Mid Cretaceous

overly faults, indicating that most fault displacement in the map are probably complete by Paleogene time.

remains to be demonstrated if it resides in Mississippian or Permian stratigraphy.

The northeastern Stevenson Ridge map sheet (parts of

NTS 115-J, I, P and O) is underlain by Paleozoic to

Au mineralization. The southwestern part of the area is

Paleogene rocks that locally host Cu-Au porphyry and

dominated by the mid-Cretaceous Whitehorse plutonic

suite which forms the backbone of the Dawson Range

Mountains. The north side of the Dawson Range

comprises rocks typical of the Yukon-Tanana terrane,

including a belt of Permian Klondike schist

(metavolcanic rocks), Permian Sulphur Creek plutonic

metasedimentary rocks. The northeast side of the area

is dominated by the Mississippian Simpson Range

plutonic suite that is intruded by the Triassic Pyroxene

Mountain suite and early Jurassic Aishihik suite. The

Mississippian to Jurassic rocks are thrust over the

Snowcap assemblage along the post-Triassic Yukon

River thrust. Late Cretaceous and younger faults occur

throughout the area but have only modest offsets.

Cover illustration

Ryan. 2013-059

Large tors of granite in the Dawson Range phase of

the Whitehorse plutonic suite, in the unglaciated

Yukon Plateau, western Yukon. Photograph by Jim

Natural Resources Ressources naturelles du Canada

**CANADIAN GEOSCIENCE MAP 116** 

**STEVENSON RIDGE** 

(NORTHEAST PART)

suite and pre-Devonian Snowcap assemblage

The Carmacks Group is widespread throughout west central Yukon.

lifficult to distinguish from those of the Carmacks Group.

STRUCTURAL GEOLOGY

MINERALIZATION.

and Ryan, 2005) 180 km to Carmacks map area.

represent a volcanic arc built on YTT.

Mesozoic-Tertiary successor rocks

Carlson (1987).