

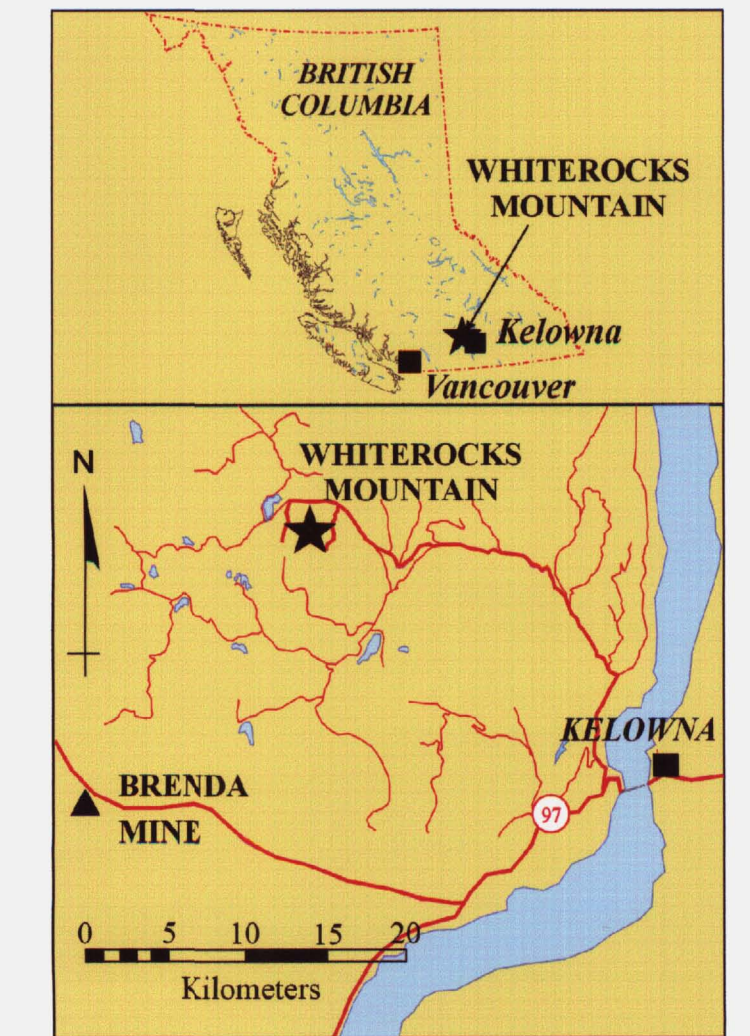
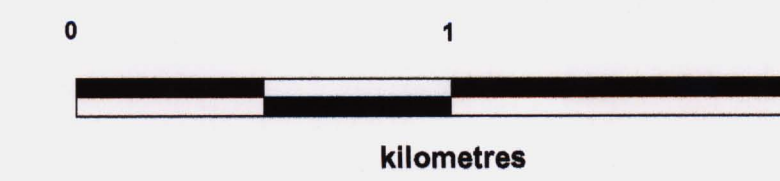


SHEET 1 of 3
**ALKALINE-HOSTED CU-PGE MINERALIZATION
IN BRITISH COLUMBIA: THE WHITEROCKS
MOUNTAIN PLUTONIC COMPLEX,
SOUTH-CENTRAL B. C.**

NTS 82L/4 & 82E/13

Mapping and Compilation
by Graham T. Nixon

Scale 1:20 000



LEGEND

QUATERNARY	
Qal	Alluvial deposits and glacial drift
QUATERNARY AND/OR MIOCENE	
QmTv	Valley and/or plateau basalt flows
Eocene	
eTKv	Kamloops/Princeton Group Volcanic and volcaniclastic rocks
LATE JURASSIC	
Jqdl	Quartz diorite, porphyritic, leucocratic
JURASSIC	
Jsg	Sandberg pluton: monzogranite, medium-grained to porphyritic
Jng	"Northern" pluton: monzogranite, medium-grained to porphyritic
Jqm	Quartz monzonite, medium to fine-grained
Jdl	Diorite, equigranular, medium-grained
Ji	Minor granitoid intrusion
JURASSIC OR OLDER ?	
WHITEROCKS MOUNTAIN ALKALINE COMPLEX	
JWq	Quartz monzonite, leucocratic
JWpq	Porphyritic monzonite (potassium feldspar<2.5cm) to non-porphyritic monzonite
JWp	Porphyritic monzonite-eynite (potassium feldspar<2.5cm)
JWk	Megacrystic monzonite-eynite (potassium feldspar<2.5-15cm)
JWms	Melanocratic monzonite-eynite
JWopx	Hornblende-biotite clinopyroxenite with minor hornblende clinopyroxenite and gabbro/diorite
JWt	Trachyte, chilled marginal phase
DEVONIAN-TRIASSIC	
HARPER RANCH GROUP	
DTHs	Metasedimentary and minor metavolcanic rocks
DTHc	Impure carbonate/marble, locally fossiliferous
DTHg	Conglomeratic deposits with fine-grained siliciclastic matrix

SYMBOLS

GEOLOGIC CONTACTS	TRIM
- - - - -	Geological contact, inferred or assumed
- - - - -	Geological contact, approximate
- - - - -	Geological contact, defined
- - - - -	Geological contact, pyroxenite-monzonite transition zone
- - - - -	Trend of thin geological unit
STRUCTURE	MINFILE OCCURRENCE AND PRIMARY COMMODITIES
- - - - -	Vein
- - - - -	Cleavage or foliation
- - - - -	Cleavage or foliation, vertical
- - - - -	Bedding facing unknown
- - - - -	Bedding, facing unknown, vertical
- - - - -	Bedding, overturned
- - - - -	Dike
	100m Contour
	20m Contour
	Road
	River
	Flooded Land
	Cu, PGE
	Mo
	Cu
	Ti, Fe, Mn
	Ag, Cu
	Au, Ag
	Au

GEOLOGICAL SYNOPSIS

The Whiterocks Mountain Alkaline Plutonic Complex (50.01°N, 118.75°W) is located west of Okanagan Lake approximately 25 km northwest of Kelowna. The complex intrudes metasedimentary rocks of the Devonian-Triassic Harper Ranch Group (Harper Ranch subterrane) which forms the basement to the Late Paleozoic - Early Mesozoic accreted island-arc terrane of Quesnellia. Currently available isotopic dates for the Whiterocks complex indicate a probable Middle to Late Jurassic age of emplacement.

The alkaline rocks comprise biotite- and hornblende-bearing clinopyroxenite, melanocratic monzonite-eynite, microcline-megacrystic and porphyritic monzonite-eynite, lesser quartz-bearing monzonite and minor hornblende, hornblende diorite and leuco-eynite. The porphyritic rocks commonly exhibit a strong primary mineral lamination. Ultramafic lithologies carry diopside pyroxene, ferromagnesian mica (phlogopite-biotite) and hastingsite/calcic amphibole with locally abundant magnetite and apatite. The felspathic rocks contain edenitic amphibole, microcline and sodic plagioclase (andesine-albite) with accessory magnetite, apatite and sphene, and rare melanitic garnet.

Platinum-group-element (PGE) mineralization in the complex appears to be primarily hosted by clinopyroxenites which contain both vein-hosted and disseminated Cu-Fe sulfides (pyrite-chalcopryrite-bornite). The best intersection in a diamond drill program in 1987 conducted by Verastone Gold Corporation yielded 0.19 % Cu, 0.41 g/t Pt and 0.33 g/t Pd over 11m. Re-sampling of well-mineralized core (10-cm lengths) in this interval has confirmed anomalous PGE enrichments and yielded maximum concentrations of 3.3 g/t Pt and 2.6 g/t Pd. The mineralization has previously been considered magmatic-hydrothermal in origin and related to an alkaline porphyry deposit-type. However, the local occurrence of disseminated PGE-enriched Cu-sulphides in relatively fresh clinopyroxenite appears consistent with a magmatic origin for some of the mineralization.

REFERENCES

- Mehner, D. T. (1982): Geology of the Whiterocks Mountain alkalic complex, south-central British Columbia; unpublished M.Sc. thesis, University of Manitoba, 89 pages.
- Nixon, G. T. and Carbone, B. (2001): Whiterocks Mountain alkaline complex, south-central British Columbia: geology and platinum-group-element mineralization; B. C. Ministry of Energy and Mines, Geological Fieldwork 2000, Paper 2001-1, pages 191-221.
- Ostrenko, M. J. (1978): Geological, stream silt, rock and soil geochemical and ground magnetics work on the Dobbin property (TAD1-6); B. C. Ministry of Energy and Mines, Assessment Report 8732.

Digital cartography by A. Olson and G. T. Nixon.
Digital base maps (1:20 000 TRIM) from B. C. Ministry of Environment, Lands and Parks

North American Datum 1983 (NAD83)
Altitude in metres above mean sea level
Contour interval 20 metres

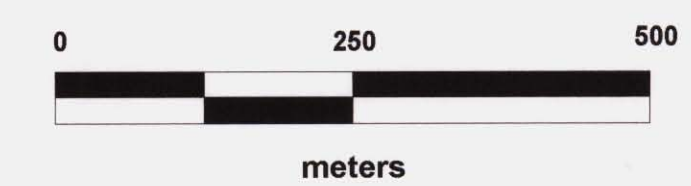
Approximate mean magnetic declination 2000 for the map area: 19° 8' E decreasing annually 9'

SHEET 2 of 3
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LEGEND

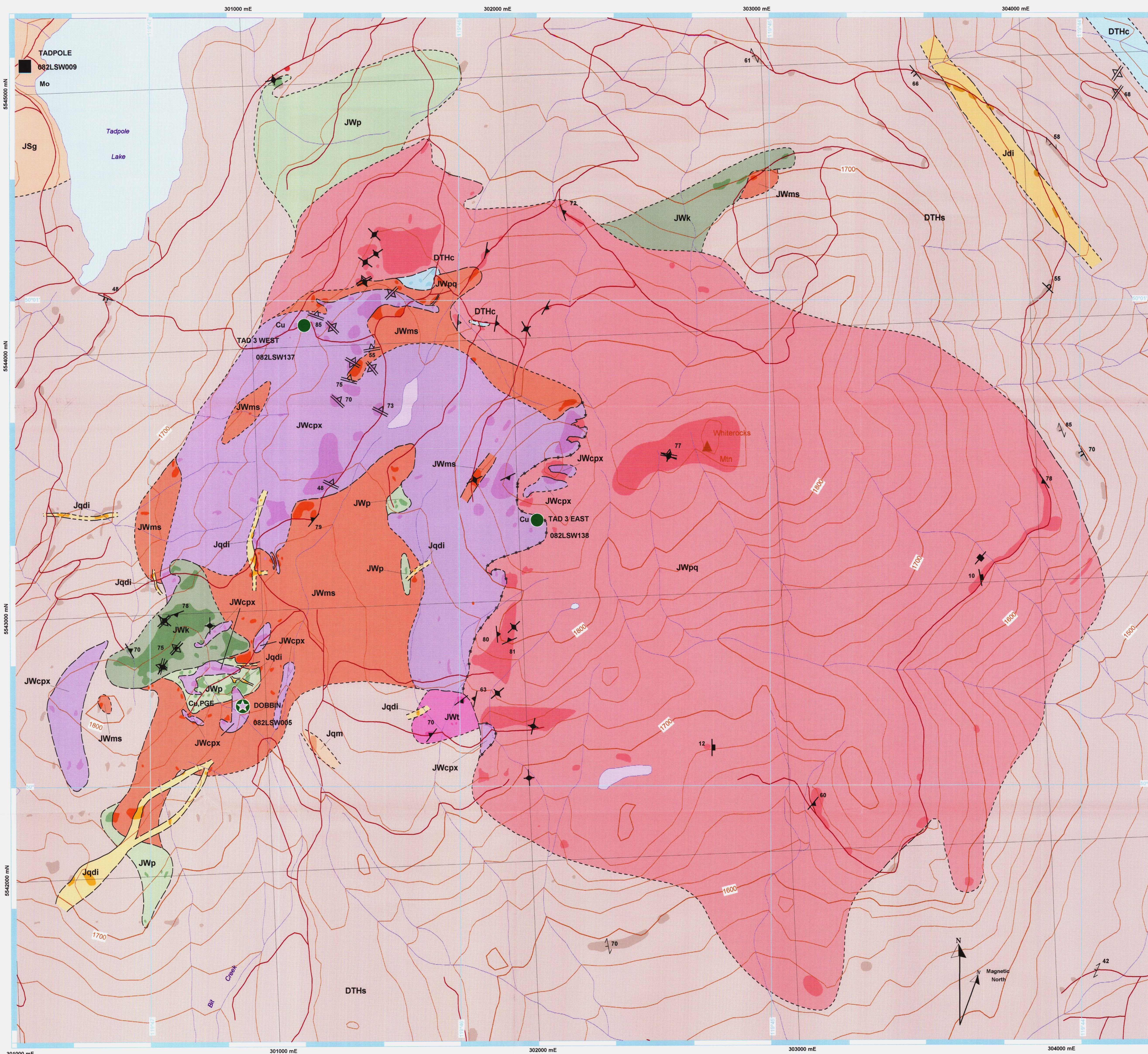
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		---	Flooded Land
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---	Cleavage or foliation (S1)	■	Mo
---	Bedding, overturned	●	Cu
---	Dike, vertical		
---	Dike		
---	Igneous mineral lamination, vertical		
---	Vein		
---	Igneous mineral lamination		
---	Vein, vertical		
---	Igneous mineral lamination, trend		

REFERENCES

- Mehner, D. T. (1982): Geology of the Whiterocks Mountain alkalic complex, south-central British Columbia; unpublished M.Sc. thesis, University of Manitoba, 89 pages.
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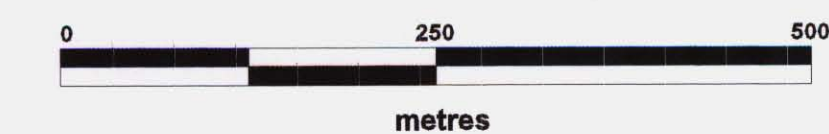


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Igneous mineral lamination
Igneous mineral lamination, vertical

**MINFILE OCCURRENCE AND
PRIMARY COMMODITIES**

Ti,Fe,Mt
Ag,Cu

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