Ministry of Energy, Mines and Petroleum Resources

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GEOLOGY AND MINERAL DEPOSITS OF THE WHIPSAW CREEK-EASTGATE-WOLFE CREEK AREA, BRITISH COLUMBIA

NTS 92H/01W; 02E; 07E; 08W

By N.W.D. Massey, J.M.S. Vineham and S.L. Oliver

(Assisted in the field by S. Jascheko)

Scale 1:30 000

1 0 1 2 3 4 kilometres

Grid North / True North 1° 43'
Magnetic North 17° 22'
Approximate mean declination for centre of map, 2008. Decreasing 0° 16' annually UTM zone 10, NAD 83

Sample location
Fe-carbonate alteration zone

Locations of assay samples (see Table 1 for analyses and identification of groupings).
Geological contacts and faults in the grey map area are as in the main map.

Table 1: Analyses for selected elements on mineralized grab samples collected in the map area.

Sample No	Latitude	Longitude	Zone	Northing	Easting	Lab No.	Mo (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppb)	Au (ppb)	As (ppm)	Sb (ppm)	S (%)
a) Sulphide mineralization associated with the Whipsaw porphyry															
08NMA28-01	49.280038	-120.765018	10	5461990	662519	61556	50.31	456.75	1.24	34.9	541	2.9	1.1	0.03	0.89
08SOL18-13A	49.298642	-120.759313	10	5463070	662902	61548	0.49	722.35	0.78	139.7	651	1.6	0.5	0.07	1.49
08SOL18-13B	49.298642	-120.759313	10	5463070	662902	61550	0.93	595.70	0.54	106.8	710	1.7	0.3	0.07	0.70
08SOL18-14A	49.297318	-120.762781	10	5462915	662655	61546	1.12	238.52	1.09	69.2	177	1.7	0.8	0.02	0.92
08SOL18-14B	49.297318	-120.762781	10	5462915	662655	61547	0.93	665.15	1.33	55.0	582	3.9	1.6	0.03	1.90
b) Calcareous tuffs, partially skarned															
08NMA12-03-01	49.182849	-120.510861	10	5450765	681387	61564	0.87	46.86	3.55	29.9	60	1.3	-0.1	0.22	1.45
08NMA12-03-02	49.183064	-120.511271	10	5450788	681357	61719	0.76	22.76	4.70	45.7	133	3.2	1.8	0.24	1.53
08NMA12-03-03	49.183653	-120.512382	10	5450851	681274	61562	0.73	76.91	1.78	35.4	31	4.7	3.9	0.20	1.03
08NMA12-05-01	49.184253	-120.515249	10	5450910	681063	61563	1.39	101.73	1.91	56.7	47	1.3	1.3	0.15	1.64
c) Iron carbonate–silica alteration zones															
08NMA29-07A	49.311243	-120.687187	10	5464629	668103	61554	0.24	23.70	2.07	22.5	59	1.5	0.5	0.03	-0.02
08NMA29-07B	49.311243	-120.687187	10	5464629	668103	61555	0.13	196.37	1.86	57.8	91	23.2	0.4	-0.02	-0.02
08NMA32-07A	49.347796	-120.686680	10	5468693	668015	61551	0.44	79.31	1.14	64.4	143	0.9	105.9	0.15	0.20
08NMA32-07B	49.347796	-120.686680	10	5468693	668015	61552	0.47	75.46	1.68	52.3	85	1.8	78.5	0.10	0.11
08NMA32-07C	49.347796	-120.686680	10	5468693	668015	61553	0.28	122.23	0.78	60.6	238	2.6	152.2	0.13	0.23
08NMA32-07C-Rep	49.347796	-120.686680	10	5468693	668015	61565	0.31	133.05	0.98	64.3	267	3.5	155.6	0.14	0.23
08NMA33-08	49.347328	-120.687886	10	5468638	667929	61560	1.83	66.79	3.94	49.4	172	2.6	136.0	0.28	-0.02
08NMA32-10	49.348520	-120.680290	10	5468754	668478	61561	0.19	7.60	0.58	35.6	16	12.1	63.4	0.07	-0.02
08NMA32-13	49.339153	-120.681716	10	5467743	668405	61557	0.76	94.71	1.16	51.4	242	4.9	122.5	0.09	0.05
08NMA32-14	49.335878	-120.682731	10	5467377	668343	61558	17.79	87.18	3.10	222.3	236	4.5	76.1	0.22	0.02
08NMA33-06	49.311319	-120.653013	10	5464714	670586	61559	0.18	65.40	0.45	55.9	88	13.7	28.7	0.07	0.45
08SOL31-04	49.265024	-120.646993	10	5459174	671549	61549	0.09	56.02	2.88	64.2	293	2.9	3.8	0.03	0.04

Samples crushed and milled in a Cr steel mill. Analyses by ACME Analytical Laboratories Ltd. (Vancouver) using inductively coupled plasma-mass spectrometry after HCl-HNO3 digestion

LEGEND

QUATERNARY

Qal Unconsolidated fluvial and alluvial deposits

EOCENE

Ew Whipsaw porphyry: grey to pink quartz-biotite-feldspar porphyry with minor hornblende

Princeton Group

EPif buff to white, fine-grained, massive, aphyric dacite

minor dykes: felsic, intermediate, mafic composition

EP undifferentiated mafic to felsic, mostly subaerial, alkalic volcanics; aphyric to porphyritic, massive to volcaniclastic; minor clastic sediments

EARLY CRETACEOUS

KVqm Verde Creek stock: medium to coarse-grained, equigranular to porphyritic, pinkish-grey quartz monzonite; miarolitic vugs common; minor needle hornblende porphyry

JURASSIC TO CRETACEOUS

Eagle Plutonic Complex

mid-Cretaceous

Kfq grey, massive to foliated, quartz-feldspar porphyry

KEg pink muscovite-biotite granite, minor red garnet (?correlatable with the Fallslake Plutonic Suite)

Middle-Late Jurassic

JEgd "Eagle tonalite": massive to foliated, equigranular to seriate, biotite granodiorite and tonalite; biotite foliae; microgranodiorite, quartz-biotite-feldspar pegmatite and quartz-feldspar aplite.

JEgn biotite-feldspar gneiss intruded by massive granodiorite (?equivalent to the "Eagle gneiss" unit)

MIDDLE TO UPPER TRIASSIC

East of Boundary Fault

Copper Mountain Intrusions

TCi microdiorite

TCd grey, medium to coarse grained pyroxene-hornblende diorite, monzonite (Copper Mountain stock); green-grey, fine to medium grained, pyroxene-biotite diorite (Voigt stock)

TCp coarse biotite-magnetite-olivine pyroxenite

Nicola Group

Ti mafic pyroxene porphyry

Wolfe Creek Formation

TNwd grey, green, buff and brown, massive to graded, volcanic sandstone, siltstone; tuff and minor breccia

TNwc pyroxene-feldspar crystal tuff, lapilli tuff, breccia and agglomerate; minor volcanic sandstone and siltstone

TNs grey to dark grey, calcareous to siliceous, graded mudstone, siltstone, sandstone; polymictic conglomerate; limestone

TNsv chloritic to calcareous, pyroxene-feldspar crystal tuff, lapilli tuff; some skarn

TNsp fine-grained, dark grey to silvery black phyllite; grey feldspar-sericite schist; weakly foliated conglomerate

West of Boundary Fault

Td grey to brown, fine to medium grained hornblende diorite, melanodiorite, gabbro

Tu dark green to black, massive to schistose pyroxenite

Nicola Group

TNv pyroxene-feldspar crystal tuff, lapilli tuff, breccia and agglomerate; minor volcanic sandstone and siltstone

TNv´ weakly to strongly foliated tuff, lapilli tuff, breccia; chlorite schist, pyroxene-(feldspar)-chlorite schist

TNvs feldspathic tuff, tuff breccia, tuffaceous sandstone, pebbly sandstone, cherty siltstone

TNs interbedded black argillite, grey siltstone and sandstone; minor thin grey limestone beds

?PERMIAN OR TRIASSIC

Eastgate-Whipsaw Metamorphic Belt

TMa amphibolite unit: dark grey to black, medium to coarse-grained, well foliated, amphibolite and feldspar amphibolite; rare relict pyroxene; rare marble and limestone.

TMq quartzite-biotite-quartz schist unit: interbedded quartzite, biotite quartzite, actinolite-biotite quartzite, biotite-quartz schist and minor chlorite schist; rare marble

TMsv mixed metavolcanic-metasedimentary unit: heterogeneous package of chlorite, chlorite-quartz, chlorite-sericite, sericite, sericite-quartz(-feldspar), sericite-chlorite schist and paper schist; fine-grained quartzite; meta-basalt; quartz-eye biotite rhyolite

SYMBOLS

Geological contact (approximate, assumed, transitional)

Limit of Quaternary

Bedrock outcrops noted during mapping

Bedding (inclined, vertical, overturned, pillows)

Schistosity (inclined, vertical)

Secondary schistosity (inclined, vertical)

Cleavage, fracture cleavage (inclined, vertical)

Gneissosity (inclined)

Lineation (plunge indicated) (unclassified, rod structure, mineral, crinkle)

Axis of minor folds (plunge indicated)

Faults (approximate, assumed)

MINFILE occurrence (past producer, prospect, showing) (see Table 2 for details - numbers preceded by 092HSE)

MINFILE occurrence (outside map area) (unnumbered)

Contour (100m, 20m intervals)

Spot height (height in metres)

Road (paved, gravel, trail)

Railroad (abandonned)

Transmission line

Pit outlines

Buildings

Provincial Parks

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Past producer
Prospect
Showing

Table 2: MINFILE occurrences in the map area. Note that only the principal name is shown for each occurrence for brevity.

MINFILE number	Name	Status	Commodities	Latitude	Longitude	Deposit type	Zone	Easting	Northing
Copper Mountain camp									
092HSE021	Falum	Showing	Cu, Au	49.338050	-120.471100	L03	10	683705	5468113
092HSE022	Azurite	Showing	Cu	49.330280	-120.480000	L03	10	683089	5467227
092HSE027	Jennie Silkman	Prospect	Cu, Au	49.312780	-120.508100	L03	10	681115	5465214
092HSE029	Marquis of Lorne	Prospect	Cu, Ag	49.291940	-120.513900	L03, K01	10	680767	5462884
092HSE031	Johnston	Showing	Cu	49.291390	-120.533100	L03	10	679375	5462777
092HSE033	Friday Creek	Prospect	Cu, Au, Ag, Pd, Pt	49.300000	-120.560600	L03	10	677345	5463669
092HSE044	St. Louis Fraction	Showing	Cu, Ag	49.284720	-120.536400	L03	10	679157	5462028
092HSE092	Skagit 1 Fraction	Prospect	Cu, Ag	49.291940	-120.506400		10	681312	5462902
092HSE109	OX	Showing	Cu	49.268610	-120.521100	L03	10	680327	5460274
092HSE114	Reco	Prospect	Cu, Au, Ag	49.285280	-120.545300	L03, L01	10	678509	5462069
092HSE121	Enterprise	Showing	Cu	49.290550	-120.540800	L03	10	678813	5462666
092HSE132	TAS	Showing	Cu	49.279450	-120.449700	D03, L03, L01	10	685479	5461651
092HSE192	Y	Showing	Cu	49.284440	-120.487500	L01, G04	10	682713	5462114
092HSE193	Y 46	Showing	Cu	49.295280	-120.467800	L01, G04	10	684107	5463366
092HSE194	Elk No. 1 Fraction	Showing	Cu	49.290000	-120.546700	L03	10	678391	5462590
092HSE195	Ilk	Prospect	Cu, Au, Ag, Pd	49.293890	-120.555600	L03	10	677731	5463002
Red Star camp									
092HSE067	Red Star	Past Producer	Zn, Cu, Ag, Au, Pb, Mo	49.149720	-120.610000	G06, I05	10	674279	5446850
092HSE068	Pasayten	Prospect	Cu, Au, Ag, Pb	49.156390	-120.591100	G06, I05	10	675632	5447635
092HSE069	Knob Hill	Prospect	Cu, Ag, Zn, Au	49.146670	-120.626700	G06, I05	10	673074	5446472
092HSE093	Paw	Showing	Cu, Au, Ag	49.154450	-120.621100	I06	10	673452	5447350
092HSE191	Golden Crown	Showing	Cu, Au, Ag	49.153340	-120.586100	L01, G06	10	676008	5447307
S and M camp									
092HSE072	Knight and Day	Prospect	Zn, Pb, Au, Ag, Cu	49.262780	-120.732800	I05, G04	10	664950	5459142
092HSE073	S and M	Past Producer	Pb, Zn, Cu, Ag, Au	49.275550	-120.736100	I05, G04	10	664665	5460555
092HSE097	Metestoffer	Prospect	Zn, Au, Ag, Cu, Pb	49.261390	-120.746100	I05, G04, I06	10	663984	5458958
092HSE098	Five Fissures	Prospect	Pb, Zn, Ag, Cu, Au	49.267780	-120.733600	I05, G04, I06	10	664873	5459696
092HSE206	T.G.S.	Showing	Zn, Cu	49.282500	-120.746100	G04	10	663915	5461305
092HSE207	BZ	Prospect	Zn, Cu, Ag, Au, Mo, Pb	49.277500	-120.745600	G04	10	663971	5460750
Whipsaw camp									
092HSE102	Whipsaw	Prospect	Cu, Mo, Ag	49.293330	-120.759400	L04	10	662909	5462480
092HSE074	Marian	Prospect	Zn, Cu, Au, Ag, Pb, Mo	49.277500	-120.757500	I05, G04, K01, K02	10	663103	5460724
Others									
092HSE042	Wilmac	Showing	Cu	49.375550	-120.679700		10	668424	5471795
092HSE071	Silver Moon	Prospect	Au, Ag, Zn, Cu, Pb	49.196950	-120.553900	I01	10	678200	5452230
092HSE077	Riv	Showing	Au, Ag	49.355000	-120.601400	I01, L01	10	674183	5469688
092HSE081	Mazie	Prospect	Pb, Ag	49.274720	-120.700000	G06, I05	10	667294	5460541
092HSE105	Ski	Showing	Cu	49.348610	-120.604700		10	673963	5468970
092HSE112	Nev	Showing	Cu	49.292500	-120.658100	L04, K01	10	670283	5462611
092HSE124	Goldroop	Past Producer	Zn, Cu, Pb, Au, Ag	49.335560	-120.626900	G06, I05	10	672395	5467468
092HSE168	Sunday Creek	Prospect	Zeolite	49.248610	-120.584200	D01	10	675811	5457902
092HSE236	Whipsaw Creek Placer	Past Producer	Au, Pt	49.306390	-120.649700	C01	10	670841	5464174

C01: surficial placer
D01: open-system zeolite
D03: volcanic redbed Cu
G04: Besshi massive sulphide
G06: Noranda/Kuroko massive sulphide
I01: Au-quartz veins
I05: Ag-Pb-ZnAu polymetallic veins
I06: Cu±Au veins
K01: Cu skarn
K02: Pb-Zn skarn
L01: subvolcanic Cu-Ag-Au (Au-Sk)
L03: alkalic porphyry Cu-Au
L04: porphyry Cu±Mo±Au

Locations of MINFILE occurrences in the map area. Important camps are outlined and labelled (see Table 2).
Geological contacts and faults in the grey map area are as on the main map.