

Location/Identification

MINFILE Number:	092ISE013	National Mineral Inventory Number:	09216,7 Cu3
Name(s):	HIGHMONT HIGHMONT MINE, HIGHMONT (EAST), HIGHLAND VALLEY COPPER, ZONE 1, EAST PIT		
Status:	Past Producer	Mining Division:	Kamloops, Nicola
Mining Method	Open Pit	Electoral District:	Fraser-Nicola
Regions:		Resource District:	Thompson Rivers Natural Resource District
BCGS Map:	0921046		
NTS Map:	092107W	UTM Zone:	10 (NAD 83)
Latitude:	50 25 54 N	Northing:	5588542
Longitude:	120 59 53 W	Easting:	642179
Elevation:	1636 metres		
Location Accuracy:	Within 500M		
Comments:	East pit		

Mineral Occurrence

Commodities:	Copper, Molybdenum		
Minerals	Significant:	Chalcopyrite, Bornite, Molybdenite, Chalcocite	
	Associated:	Quartz, Calcite, Zeolite, Pyrite, Specularite	
	Alteration:	Biotite, K-Feldspar, Sericite, Kaolinite, Chlorite, Epidote, Albite, Tourmaline	
	Alteration Type:	Potassic, Sericitic, Argillic, Propylitic	
	Mineralization Age:	Unknown	
Deposit	Character:	Vein, Stockwork, Disseminated	
	Classification:	Porphyry, Hydrothermal	
	Type:	L04: Porphyry Cu +/- Mo +/- Au	

Host Rock

Dominant Host Rock:	Plutonic		
Stratigraphic Age	Group	Formation	Igneous/Metamorphic/Other
Triassic-Jurassic	-----	-----	Guichon Creek Batholith
Isotopic Age	Dating Method	Material Dated	
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Lithology:	Quartz Diorite, Quartz Feldspar Porphyry Dike, Quartz Porphyry, Plagioclase Quartz Porphyry Dike, Aplite Dike, Lamprophyre Dike, Andesite Dike		
Comments:	Skeena variety.		

Geological Setting

Tectonic Belt:	Intermontane	Physiographic Area:	Thompson Plateau
Terrane:	Quesnel		
Metamorphic Type:	Regional		

Inventory

Ore Zone:	EAST PIT	Year:	1988
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Category: Unclassified
Quantity: 87,600,000 tonnes

Report On: Y
NI 43-101: N

Commodity	Grade
Copper	0.2600 per cent
Molybdenum	0.0210 per cent

Comments:

Reference: Cominco Limited Annual Report 1988. CIM Spec. Vol. 46, page 175.

Summary Production

	Metric	Imperial
Mined:	37,247,399 tonnes	41,058,229 tons
Milled:	32,666,471 tonnes	36,008,620 tons
Recovery		
Copper	50,218,940 kilograms	110,713,811 pounds
Molybdenum	6,865,613 kilograms	15,136,086 pounds

Capsule Geology

The Highmont mine is situated in the central core of the Early Jurassic-Late Triassic Guichon Creek batholith and is underlain primarily by Skeena variety quartz diorite. Skeena rocks are intruded by the composite Gnawed Mountain porphyry dyke which trends west-northwest and dips vertically in the central part of the property and 75 degrees north in the eastern part. This dyke consists of biotite-quartz-feldspar porphyry derived from Bethsaida phase leucocratic quartz porphyry and breccia. The two major ore zones roughly parallel the Gnawed Mountain dyke, which itself is partly mineralized. Near the southeast corner of the East pit there is a breccia consisting of granitoid fragments in a tourmaline-hematite matrix, which appears to be gradational into crackle breccia. Smaller plagioclase-quartz porphyry dykes and narrow aplite dykes are scattered throughout the property. Tertiary lamprophyre and andesite porphyry dykes also occur.

The property is cut by several north-northeast trending post-mineral faults. The Waterhole fault strikes 025 degrees, dips westward at 60 degrees and has clay and gouge sections up to 7.5 metres wide bounded by hematitic shattered zones. Apparent left-lateral offset of up to 30 metres is evident. The fracture pattern in the East pit is well-defined and involves four main attitudes: 140 to 150 degree strike and 80 degree northeast dips; 040 to 050 degree strike and 45 degree northwest dips; 075 degree strike and vertical dip; and 095 degree strike and vertical dip. Fractures are concentrated in parallel swarms up to 60 metres in width which coincide with higher grade mineralization.

The Highmont deposits exhibit the lowest overall intensity of alteration of any producing Highland Valley deposits. Potassic alteration is weak although minor potassium feldspar occurs as veins and alteration envelopes. Secondary biotite is widespread. Quartz-sulphide veinlets with sericitic envelopes comprise phyllic alteration which coincides with the 0.28 copper isopleth in the East pit. Argillic and propylitic alteration are entirely fracture-related.

Alteration grades outward from a central vein, fracture or shear, through a zone of kaolinite and montmorillonite, into chlorite- epidote-sericite-albite alteration and then into unaltered rock. The widths of these zones vary from several centimetres to 50 metres. Late-stage calcite and zeolite veins are also present.

The principal economic minerals are chalcopyrite, bornite and molybdenite occurring predominantly in four types of veins and fracture-fillings. In the East pit, quartz veins are generally 1 to 25 millimetres wide with a vuggy texture. Chalcopyrite and bornite occur in the centre of the veins with scattered flaky molybdenite. Alteration envelopes 2.5 to 5.0 centimetres wide are characterized by coarse white sericite flakes, tourmaline clusters, minor potassium feldspar and limonite. Chalcocite is present in small amounts. Pyrite and specular hematite are gangue minerals.

Unclassified reserves in Zone 1 are 87.6 million tonnes grading 0.26 per cent copper and 0.021 per cent molybdenum (Cominco Limited Annual Report 1988).

The West Pit (092ISW036) was mined first; East Pit production began concurrently.

Production from 1981 to 1984 totalled 37,247,399 tonnes, yielding 50,219 tonnes of copper and 6865.6 tonnes of molybdenite.

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Date Coded: 1985/07/24

Coded By: BC Geological Survey (BCGS)

Field Check: N

Date Revised: 2020/06/09

Revised By: Karl A. Flower (KAF)

Field Check: N