006913

MINFILE Record Summary

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by

MINFILE No 092F 075
Production Report/Inventory Report

SUMMARY

Summary Help

Name	IRON HILL, ARGONAUT, ARGONAUT (GARNET)	**Mining Division**	Nanaimo
		BCGS Map	
Status	Past Producer	**NTS Map**	092F13E
Latitude	49° 51' 44" N	**UTM**	10 (NAD 83)
Longitude	125° 32' 45" W	**Northing**	5526421
		Easting	317037
Commodities	Iron, Limestone, Garnet, Magnetite	**Deposit Types**	K03 : Fe skarn
Tectonic Belt	Insular	**Terrane**	Wrangell

Capsule Geology

The Argonaut mine is a massive magnetite-magnetite/garnetite skarn situated on Iron Hill, just east of upper Quinsam Lake. The skarn is near the contact of limestone of the Upper Triassic Quatsino Formation and an overlying basic volcanic unit of the Upper Triassic Karmutsen Formation, both of the Vancouver Group. The Vancouver Group rocks are intruded by a granodiorite stock of the Early to Middle Jurassic Quinsam intrusions (Island Intrusions). Although the limestone is completely recrystallized, there has been no alteration and the original bedding has been preserved. The basic volcanic package is a sequence of pillow basalts which have been weakly metamorphosed. Locally, the basalts have been hornfelsed near the contact with the granodiorite.

The deposit has been deformed into a west dipping, overturned syncline whose north limb is overturned onto the south limb. The axial plane strikes generally east-west, dips north-northwest, and is irregularly curved along strike. Skarn is best developed and thickest in the hinge portion of the syncline.

Limestone outcrops on surface as an oval shaped body enclosed in skarn and greenstone, trending west-northwest along the synclinal axis for 320 metres, with a width of up to 110 metres. The unit is comprised mostly of massive to thin bedded, medium grained, white to light grey limestone with some thin dark grey beds. The limestone is high calcium in composition, with small grains of pyrite the only visible impurity. A grab sample of chips from blocks of limestone in a dump assayed 98.88 per cent CaCO3, 1.29 per cent acid insolubles, 0.09 per cent total iron and 0.07 per cent total sulphur (Minister of Mines Annual Report 1952, p.224). The Argonaut Co. Ltd. reported a limestone analysis of 54.8 per cent CaO, trace MgO, 0.14 per cent R2O3, 0.6 per cent Fe2O3, 0.06 per cent P2O5 and 0.04 per cent sulphur (Geological Survey of Canada Bulletin 172, p.51).

Skarn mineralization occurs along the contact between limestone and the pillowed basalts and consists of massive garnetite and magnetite with minor amounts of epidote, calcite, and pyrite. The margin of the skarn and host rocks is sharp and irregular. Skarn mineralization rarely occurs outside of the main body and then only as small irregular pods. The skarn mineral assemblage varies from pure, coarsely crystalline massive magnetite at its core to a mixed, crystalline magnetite/garnetite near the margin and a boundary phase of pure crystalline garnetite. In the main body of the skarn, bedding replacement features are present indicating that hydrothermal fluid migration took place preferentially along bedding planes of the limestone. Skarn has preferentially replaced the basalt with respect to the limestone.

From 1951 to 1957, 3,657,168 tonnes of ore were mined, from which 1,990,288,655 kilograms of concentrate was shipped. The dimension of the ore body measured about 400 by 150 by 120 metres, with a strike of 90 degrees and dip of 15 degrees north.

The tailings and waste pile contain fine-grained magnetite and garnet and a proposal is presently underway to recover these for industrial purposes (D. Hora, personal communication, 1990).

Bibliography

EMPR AR 1916-296-297; 1918-270; 1948-158; 1949-226; 1951-198,199; *1952-40,45,221-228; 1953-43,48,170, 1954-48,52,166; 1955-A46,A50, 78-79; 1956-A48,A52,10,119; 1957-A43,A48,69
EMPR ASS RPT 7193
EMPR BC METAL MM00237
EMPR BULL 3 (1917); 40, p. 84; *101, pp. 13,57,80,83,158, Appendix 6
EMPR EXPL 1977-E114
EMPR INDEX 3-201; 4-119
EMPR OF 1988-28
EMPR PF (*Sangster, D.F., Britton, J.W., *Fawley, A.P., (1962): Reports; *Various Plans and Sections, 1948-1956; GAC/MAC Fieldtrip Guidebook, 1995, pp. 4-7; Assay Certificate, Nov. 1989; Regional Geologist's notes, 1989; Photos, 1995)
EMR MP CORPFILE (Quinsam Lake, Coast Iron Co. Ltd.; Argonaut Mining Co.)
GSC BULL *172, pp. 54-56, Fig. 8
GSC EC GEOL Series 3 Vol. 1, pp. 73-78
GSC MAP 2-1965; 17-1968
GSC OF 463
GSC P 68-50, p. 39
GSC SUM RPT 1930, Part A, p. 73
ECON GEOL Vol. 79, pp. 869-882
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 161

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Assay Certificate

9V-1449-RA1

Company: LAIRD EXPLORATION
Project: NMD-ARGO-1
Attn: JAMES LAIRD

Date: NOV-03-89

Copy 1. LAIRD EXPLORATION, NORTH VANCOUVER,B.C.

He hereby certify the following Assay of 2 ROCK samples submitted OCT-31-89 by J.LAIRD.

Sample Number	*AU G/TONNE	*AU OZ/TON	AG G/TONNE	AG OZ/TON	CO %	NI %
9507	9.21	.269	2.9	.08	3.420	.020
9508	2.81	.082	5.4	.16	.312	.008

Argonaut Pit - NW. end. cobaltite-gold

PROPERTY FILE

*AU - 1 ASSAY TON.

Certified by _____

MIN-EN LABORATORIES

COMP: LARID EXPLORATION
PROJ: NMD-ARGO-1
ATTN: JAMES LAIRD

MIN-EN LABS — ICP REPORT

705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2
(604)980-5814 OR (604)988-4524

FILE NO: 9V-1449-PJ1
DATE: NOV-03-89
* TYPE ROCK GEOCHEM * (ACT:F31)

NW END
W WALL

SAMPLE NUMBER	AG PPM	AL PPM	AS PPM	B PPM	BA PPM	BE PPM	BI PPM	CA PPM	CD PPM	CO PPM	CU PPM	FE PPM	K PPM	LI PPM	MG PPM	MN PPM	MO PPM	NA PPM	NI PPM	P PPM	PB PPM	SB PPM	SR PPM	TH PPM	U PPM	V PPM	ZN PPM	GA PPM	SN PPM	W PPM	CR PPM
9507	2.3	1430	26461	13	15	.3	170	105280	304.4	27916	647	207550	40	1	590	2277	8	10	170	220	72	43	1	2	1	10.4	80	6	10	1	22
9508	4.8	8410	2920	1	16	.4	23	103400	84.6	2874	2337	95190	150	1	1910	4752	6	10	58	190	78	5	1	1	1	20.2	3865	1	4	1	52

Argonaut — Jim Laird — Nov. 6/89

- snooped around for 2 hours on last day of workshop.
- found two Co zones & took grab samples:
  - ① erythrite zone on wall of magnetite pit:
    0.82 oz/t Au, 26,400 ppm As, 0.31% Co
  - ② cobaltite in skarn fringing andesite dyke @ NW end of pit:
    0.269 oz/t Au, 2920 ppm As, 3.42% Co, 0.4% Zn