PF:

Oct./1994

003541

VINE - A MIDDLE PROTEROZOIC MASSIVE SULPHIDE VEIN SYSTEM

D. Pighin, Consolidated Ramrod Gold Corporation

T. Höy; B.C. Geological Survey Branch

82GW058

The Vine deposit is a steeply dipping massive pyrrhotite-base and precious metal vein deposit that cuts across shallow dipping lower and middle Aldridge siltstones and wackes in the Purcell anticlinorium in southeastern British Columbia. It is owned 90 percent by Consolidated Ramrod Gold Corporation and 10 percent by Cominco Ltd. It is described in detail by Pighin (1991) and Höy and Pighin (1994).

The deposit was discovered by D. Pighin in 1976. Work by Cominco Ltd. consisted of trenching, reconnaissance VLF-EM geophysics, and four diamond drill holes.

Kokanee Explorations Ltd. began an exploration program on the Vine property in 1989 that included geophysical and geochemical surveys, geological mapping, trenching and 14,368 metres of diamond drilling. Trenching exposed the vein for over 150 metres, and the geochemical and geophysical surveys indicated that the Vine structure continued for more than 4 kilometres. The drilling indicated that the vein is continuously mineralized along a strike length of at least a kilometre and to a depth of 800 metres; it remains open in both depth and strike.

Total reserves are outlined below:

Table 1: Internal Reserve Figures, Vine deposit (1991)*

	Tonnes	Lead (%)	Zinc (%)	Silver (g/T)	Gold (g/T)
Proven	240,000	5.20	2.24	67.23	1.92
Probable	307,000	4.22	2.51	39.77	1.75
Possible	820,000				
Total	1,367,000				

* diluted to a 2.44 metre mining width

The Vine vein is parallel to a number of northwest trending faults with west-side-down normal displacements of a few tens to a few hundreds of metres. A late fault within the Vine structure is projected southeastward, cutting across intense shearing and folding in the hangingwall of the Moyie fault. The vein straddles the boundary between

the lower and middle Aldridge, the approximate stratigraphic position of the Sullivan SEDEX deposit.

The host succession comprises four main units: a lower quartzite succession approximately 150 metres thick, a siltstone succession also about 150 metres thick, a 15 metre thick laminated argillite succession that correlates with the Sullivan horizon, and overlying turbidite deposits at the base of the Middle Aldridge.

The dominant structure on the property is the Vine vein stucture, now marked by a normal fault that dips 70° to 80° west and has a dip-slip displacement of approximately 80 metres. It contains the Vine vein mineralization and a prominent diorite dike that mineralogically is similar to the Moyie sills. This late fault, referred to as the Vine fault, cuts at least 1500 metres of Aldridge stratigraphy and can be traced northwest for about 6 kilometres.

The Vine vein system comprises a number of massive to semimassive pyrrhotite, sphalerite, galena, arsenopyrite and pyrite veins with quartz-calcite and minor chlorite gangue. Alteration is generally intense, though typically confined to a few tens of metres from the Vine structure. Early sericite overprints regional biotite metamorphism. Sulphide deposition is associated with chlorite alteration, and late pyrite veins, with calcite and quartz, cut the massive sulphide veins.

- Moyie dyke emplaced along NNW trending fracture

References

Höy, T. and D.L. Pighin (in press): Vine: A Middle Proterozoic Massive Sulphide Vein System, Purcell Supergroup, Southeastern British Columbia; *B.C. Ministry of Energy, Mines and Petroleum Resources*, Geological Fieldwork 1994, Paper 1995-1.

Pighin, D.L. (1991): Report on Vine property; unpublished report, *Kokanee Exploration Ltd.*, 15 pages.

- euhedral arseno early mineral assoc with qtz broken up by later sulphides
- massive po with intergrown sph
- late brecciation = chalco/pyrite mineral.
- chlorite/sericite altering biotite
- Fe-chlorite alteration assoc with sulphides
- late pyrite-calcite (Paleo/Mesozoic time)

⇒ Different Metallogenic event related to East Kootenay orogeny ~ 380 Ma