



# Late Submissions

# REFERENDUM MINE (82F/6)

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## INTRODUCTION

For the last several years Tom Cherry of Nelson has been surface sampling the Referendum mine (MI 82F/SW-177); this year he was successful in finding a new vein. The grade from a bulk sample of 181.4 tonnes obtained from the Referendum vein was 6.2 grams gold per tonne. The silica credit from Cominco pays for the smelting.

## GENERAL GEOLOGY (Fig. 51-1)

The host rocks for the veins are roof pendants in the Nelson batholith and include andesites of the Lower Jurassic Rossland Group. Recently this unit has come under intensive examination by exploration companies searching for massive sulphides. In the Referendum mine area (Fig. 51-1) zones of alternating sedimentary rocks, metamorphic rocks, and volcanic rocks are present. The rocks include agglomerates, conglomerates with boudinage texture, tuffs, and crystal tuffs. The metamorphic rocks (included with the sediments for mapping purposes) include quartz augen sericite schist (bird's eye sericite schist) and chlorite schist. The volcanic rocks are basalts and andesites. The mine area (Fig. 51-2) is in andesite which has been intruded by lamprophyre dykes. Throughout the area there are small tension veins with tourmaline and ilmenite. Some are quartz carbonate filled and some have quartz only. Zoning within the veins is suspected, but not proven. Only rarely is visible gold seen, yet production from the main vein and new vein has given consistent grades. To the southeast of the mine area there is a small Eocene Coryell plug which is believed to have a shonkinite rim (Fig. 51-1).

## REFERENDUM MINE (Fig. 51-2)

The Annual Report of the Department of Mines for 1907 indicates that total production to that date was 2 268 tonnes grading 12.4 grams gold per tonne. The mining was apparently at the 61-metre level. The grade was approximately double that being obtained at present from the surface. In the vicinity of the shaft, which has not

been trenched, the main vein has considerable amounts of mass ve, *fine-grained tourmaline*. *Tension veins* join the main vein in this area and also have tourmaline. In prospecting for the extension of the main vein it was noted that on the footwall side of the vein the andesites are sheared, while the hangingwall has blocky jointing. On this basis, a small vein was found on the east side of the biotite lamprophyre dyke with a horizontal displacement by the dyke of approximately 10 metres to the northwest.

## NEW VEIN SHOWING

The 'new vein' (Fig. 51-2) was found by trenching. It is on strike with an unnamed vein on the next claim to the west (Fig. 51-1). The west segment of the 'new vein' may be a separate vein; its vuggy nature and high tourmaline content appear quite different from the shear vein. Based on the displacement of the main vein on the east side of the biotite lamprophyre dyke, it is likely that the 'new vein' will be found displaced to the northwest by a similar amount (10 metres). A bulk sample was taken at the visible gold location; it returned a grade of 3.1 grams gold per tonne.

## OTHER VEINS AND MINERALIZATION

On the logging road south of Referendum mine, a small gold-bearing tension vein striking 125 degrees and dipping 77 degrees south has been discovered by Tom Cherry. It is a quartz calcite vein with visible gold in bornite. Unfortunately the vein is only a few metres long.

On the same road, but further west, there is a 5-metre-wide chlorite schist band with a small amount of pyrite which is reported to assay 1.5 grams gold per tonne. This type of exploration target has not been explored and warrants further investigation.

## ACKNOWLEDGMENT

We appreciate having the property brought to our attention by Tom Cherry, and his donation of vein samples for study.

British Columbia Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork, 1985, Paper 1986-1.

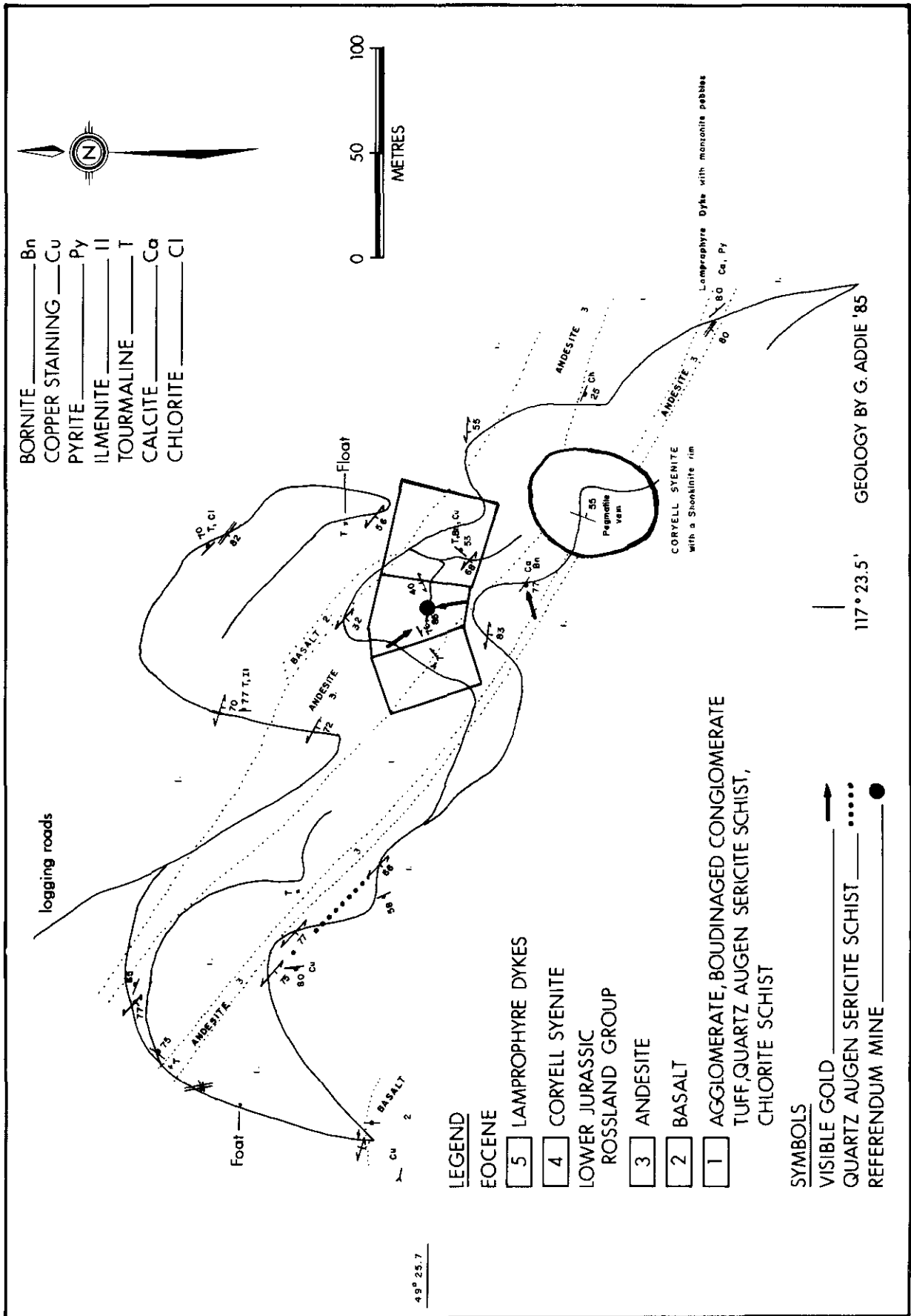


Figure 51-1. Geology of the Referendum mine area.

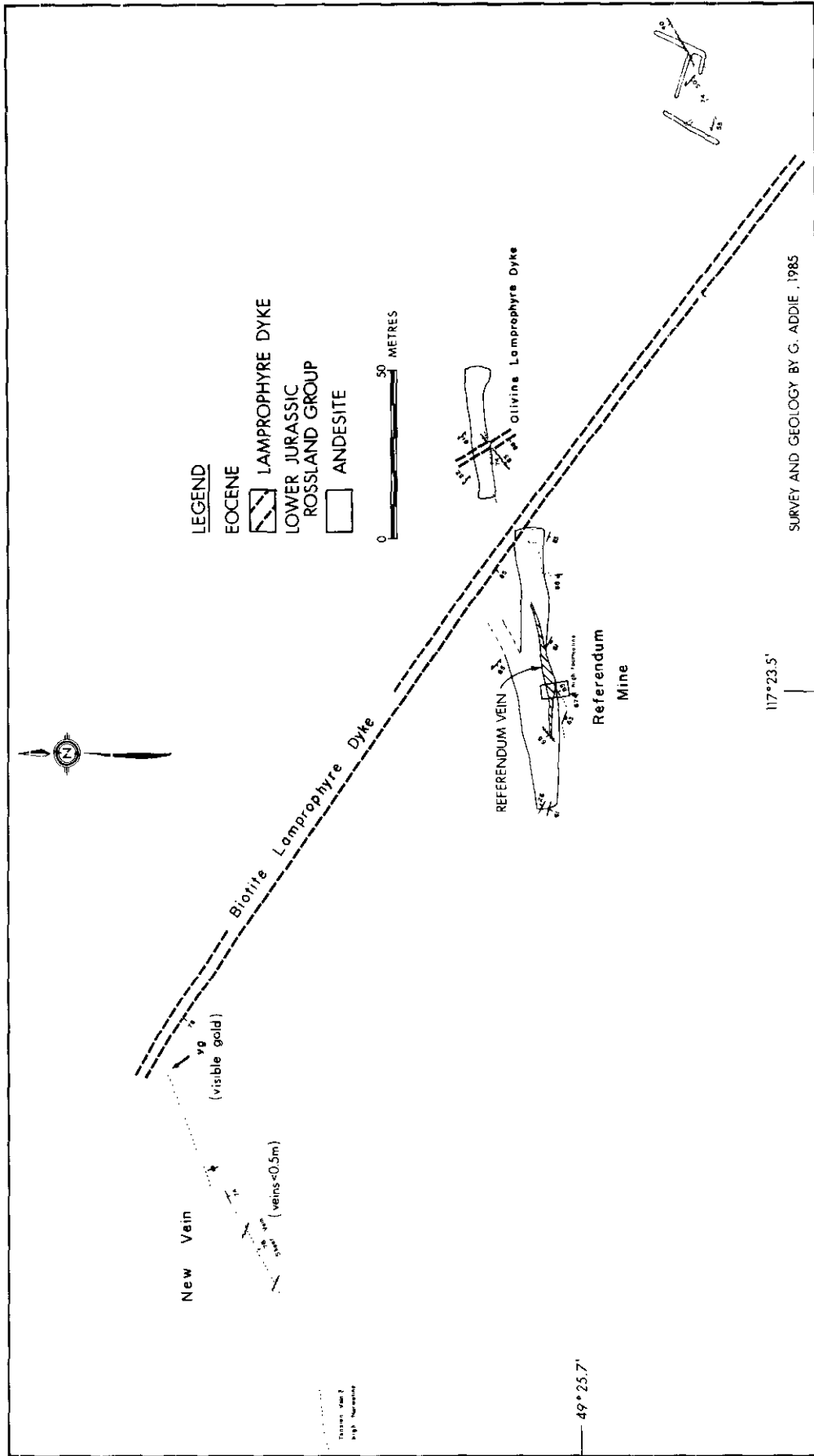


Figure 51-2. Geology of the Referendum mine. 82P76.