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GEOLOGY OF THE COLAGH PROSPECT, UNUK MAP AREA (104B/10E)

By Mary E. MacLean

KEYWORDS: Economic geology, Betty Creek formation, Hazelton Group, Iskut River, epigenetic massive sulphide, gold.

INTRODUCTION

The Colagh prospect (MINFILE 104B 352) is a recently discovered polymetallic occurrence located in the Iskut-Sulphurets area of northern British Columbia (Figure 2-14-1). The prospect is 7 kilometres east of the Snippaker airstrip and directly south of the Copper King Glacier. At 1370 metres elevation in a glacial cirque, the area is free of snow only in late summer. Outcrop is scattered and glacial debris is ubiquitous. Vegetation is restricted to heather and scrub-brush on the adjacent slopes.

The prospect was discovered in August 1988 by C.P.W. Russell during routine mapping as part of the ongoing Iskut-Sulphurets project. The area was visited by the author for three days in July and August 1989, when detailed mapping and sampling were carried out.

Omega Gold Corporation and Ecstall Mining Corporation jointly own the Macgold claims covering the Colagh prospect, and to date have established a grid, completed induced polarization and geochemical surveys, and chip sampled in three trenches. Most of this work has been done since the author's last visit in late August.

STRATIGRAPHY AND INTRUSIVE ROCKS

Approximately 3 square kilometres surrounding the prospect were mapped. The rocks have been subdivided lithologically based on relative abundances of dacitic and andesitic volcanics, and sedimentary rocks (Figure 2-14-2)

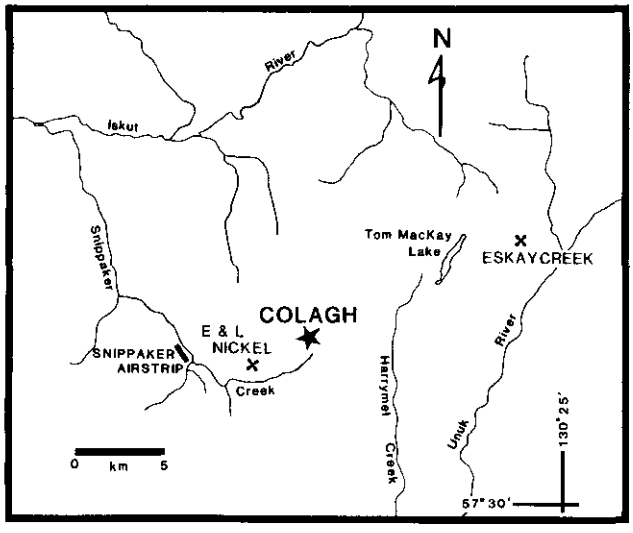


Figure 2-14-1. Location of Colagh prospect and nearby properties in Iskut River area.

The lowermost volcanic Unit (1A) consists of bedded and massive andesitic ash to lapilli tuffs, and feldspar porphyries

Moving up-section, Unit 2D is primarily dacitic ash crystal and lapilli tuffs, commonly well laminated with occasional graded bedding and welded structures (fiammé) A distinctive massive lapilli tuff at least 5 metres thick may be useable as a marker unit. It contains abundant, sharply angular, pink siliceous clasts which sometimes resemble potassium feldspar crystals.

Unit 2A, which hosts the Colagh showing, is a discontinous lens of massive andesitic ash and lapilli tuffs.

Higher in the stratigraphy, an increasing amount of fine to medium-grained sedimentary rock is interbedded with the volcanics. Unit 3SV contains mainly black to brown argillites, siltstones and maroon (hematitic) sandstones intercalated with thinly bedded andesitic to dacitic ash and dust tuffs. A gradational boundary is drawn between Units 3SV and 3S, where the latter has greater than 50 per cent sedimentary rocks. Higher in the section, volcanic rocks diminish considerably.

Several gabbroic dikes intrude the sediments and volcanics. These are similar in composition to the main Jura-Cretaceous Nickel Mountain olivine gabbro to the west which hosts the E & L nickel deposit (*see* Hancock, 1990 this volume). Other minor dikes have compositions ranging from granodiorite to andesite feldspar porphyry and pyroxene porphyry.

The western edge of the Eocene King Creek dike swarm (Britton *et al.*, 1989) crosses the map area and can be seen intruding the lowermost andesite Unit (1A). The dike swarm has no regular orientation but trends generally northeast Compositions range from felsic to mafic.

STRATIGRAPHIC CORRELATION

The volcanics are correlated with the Betty Creek formation of the Lower Jurassic Hazelton Group. West of the Colagh prospect on Nickel Mountain, sedimentary strata are assigned to the Salmon River formation (Hancock, 1990), this volume). The increase in sedimentary material up-section in the Betty Creek volcanics reflects the gradational nature of the contact between the two formations.

The Mount Dilworth formation, which overlies the Betty Creek formation in the area east of the Unuk River (Britton *et al.*, 1989), and in the Stewart area (Alldrick, 1985), is missing from the stratigraphic section on the Macgold claims.

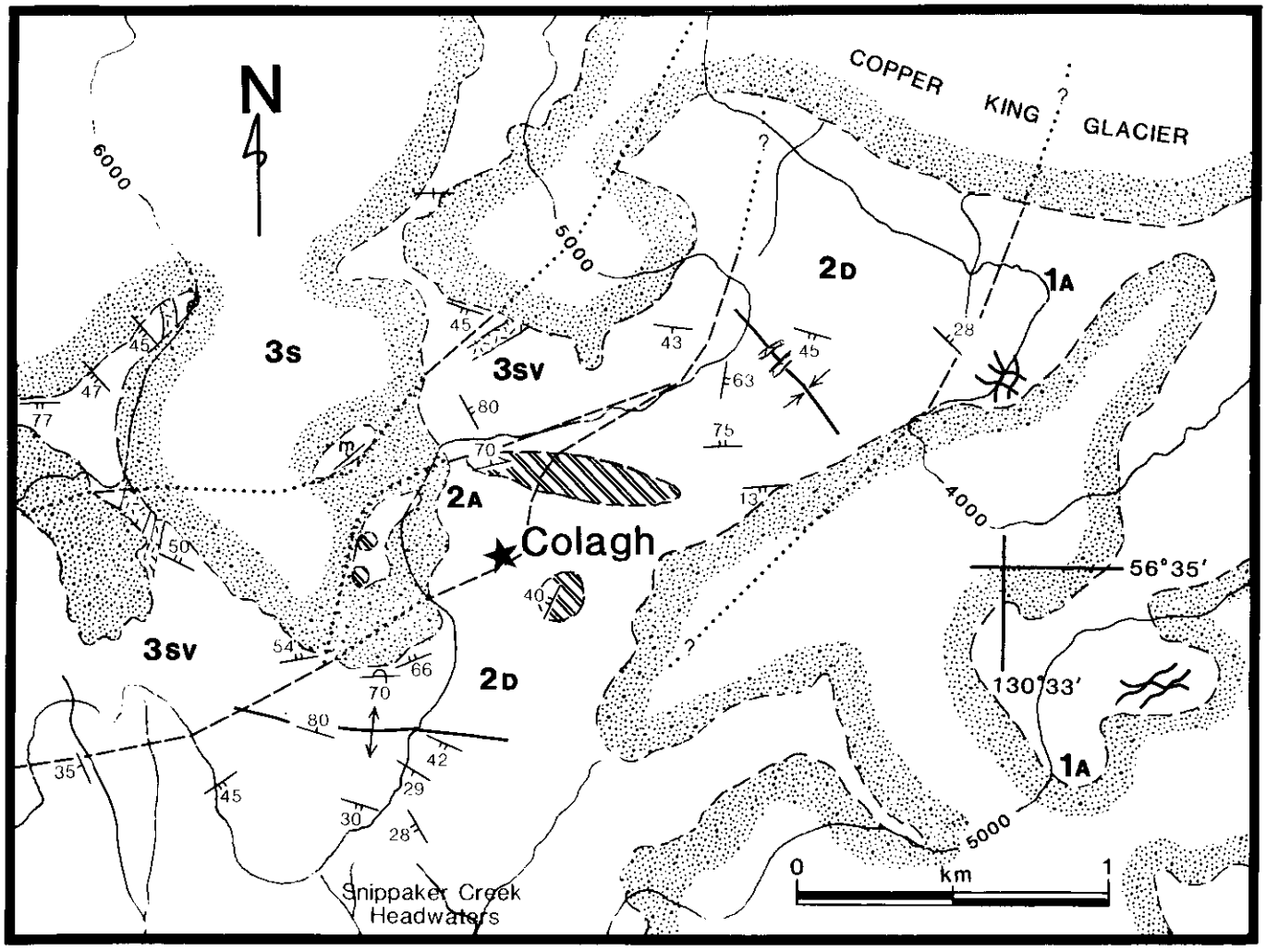


Figure 2-14-2. Geology in vicinity of Colagh prospect.

No fossils have been found in the Colagh area, although ammonoids of possible Toarcian age were collected about 4 kilometres to the west on Nickel Mountain (Grove, 1986; Hancock, 1990, this volume).

STRUCTURE

The main lithologic boundaries trend northeasterly although bedding measurements in volcanics and sediments are erratic and top indicators uncommon. Local strong foliation dips steeply north-northwest.

The axial traces of minor folds trend west-northwest and are best displayed in Unit 2D (Figure 2-14-2). This coincides with the regional orientation obtained from a stereonet; fold axes plunge 1° west (Figure 2-14-3).

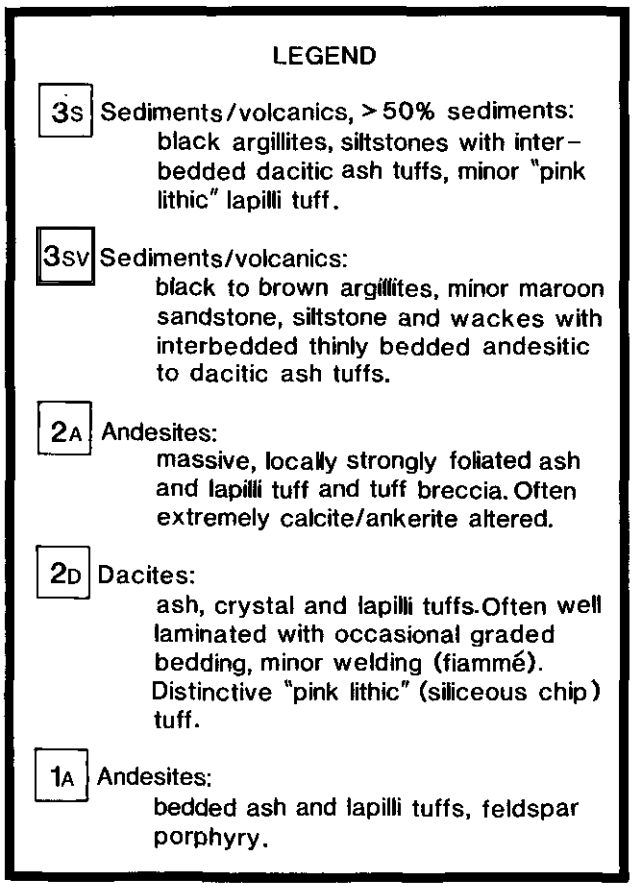
MINERALIZATION AND ALTERATION

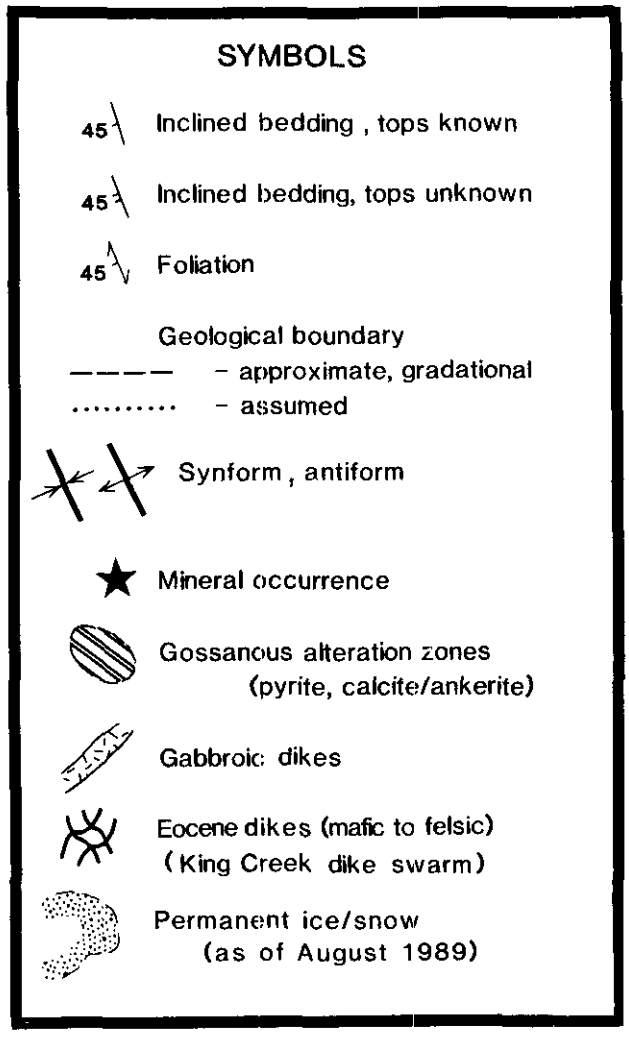
The Colagh showing consists of coarsely banded sulphide veins occupying regular northeast and northwest-trending shear zones in massive andesitic ash to lapilli tuffs.

Bornite, sphalerite, chalcopyrite and pyrite are layered in bands 3 to 4 centimetres wide. The bornite and sphalerite are closely associated, with covellite replacing bornite. Secondary minerals include hematite, azurite and malachite.

The main vein is approximately 1 metre wide and pod shaped, traceable on the surface for 8 metres. Lesser amounts of the massive sulphides occupy a thin shear for at least another 30 metres northeast along strike. The thin veins continue into autobrecciated andesitic ash and crystal tuffs laced with quartz veinlets. Other shears 2 to 3 centimetres wide, with similar mineralization, parallel the main vein in the 15 metres of continuous outcrop to the north. Cross-shears trending southwest are narrow and sparsely mineralized.

About 100 metres west-southwest of the sulphide showing, a gold and silver-bearing quartz and calcite stockwork breccia zone (known as the "Ice" showing) has been sampled in three trenches. The best assays obtained were 11.0 grams per tonne gold over a 1 metre width with a weighted average of 7.2 grams per tonne over 2 metres (C. Graf, personal communication, 1989).





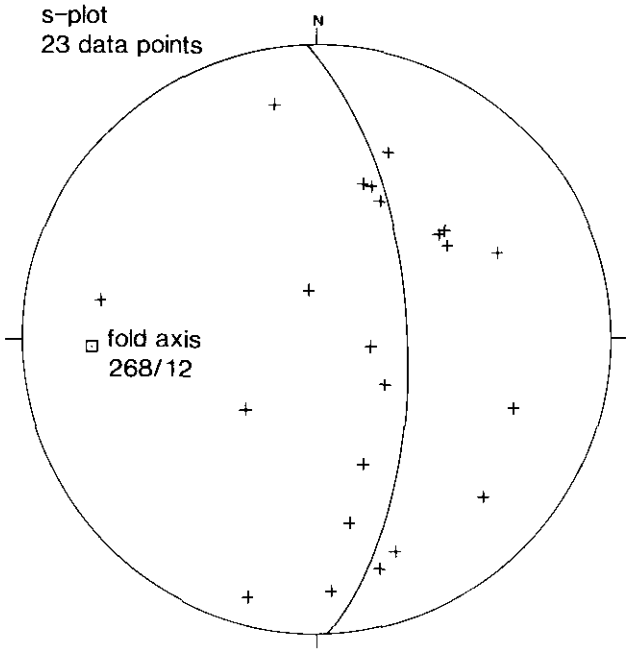


Figure 2-14-3. Stereonet (equal area) of poles to bedding (+).

The outcrop in the surrounding cirque is scattered; up to 45 metres north of the main showing vienlets of pyrite and chalcopyrite are found in andesitic ash tuffs.

The sulphide veins appear to be an epigenetic hydrothermal fracture infilling. The gold and silver-bearing quartz breccia stockwork is interpreted to be a separate (later ?) stage of mineralization (C. Graf, personal communication, 1989).

The andesites hosting the veins are unaltered, yet large gossans occur south and north of the showing (Figure 2-14-2). Alteration within the gossans consists of pyrite, calcite and ankerite. Jasper and manganese oxide also occur with minor epidote in clots and veins.

A grab sample taken from the main banded base metal sulphide lens in 1988 assayed 0.11 gram per tonne gold and 49.00 grams per tonne silver.

ACKNOWLEDGMENTS

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