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DATE : Wednesday, January 13, 1988
TIME : 12:00 noon
PLACE : Regal Ballroom, Hotel Georgia, Va.
TOPIC : Samatosum Volcanogenic Massive Sulfide Deposit
SPEAKER : Ian Pirie, Senior Geologist, Minnova Inc., Vancouver
MEMPR
ATTENDEES: J. Gravel, T. Hoy, B. McMillan, V. Preto, P. Wilton, T. Schroeter

Rea G. 62 M 191 - 07

Background Data

- Located 80 km NNE of Kamloops, 25 km E of Barriere
- Physiography dominated by Adams Plateau, a 5000-6000 ft (1500m-1800m) high peneplane, dissected down to a level of 1500 ft (450m), slopes are gentle
- Acquired as part of 1983 reconnaissance program after detailed discussions with B.C. Ministry geologists, discovery outcrop found by prospector, A. Hilton, along a fresh road cut
- Preliminary drilling failed to find extension of original massive sulphide outcrop which graded in % range for Pb, Zn, As and 1.32 oz/t Au over 10.5 ft (3m) of discovery zone
- Subsequent geophysical, geochemical and drilling outlined two other pods in next two years (see Figure 1)
- Followup of Pb, Zn soil anomalies and a Max-Min anomaly resulted in DDH 44 hitting 3.5m of massive barite and DDH 55 hitting 2-3m of massive pyrite. DDH 64 located in difficult terrain produced 1m of massive sulphide grading 2700 gm/t Ag, 9.3% Cu, 7.8% Zn, 6.8% Pb and 3.8 gm/t Au. Drill reserves to date indicate 600 000 t grading 1100 g/t Ag, 1.8 g/t Au, 1.2% Cu, 3.5% Zn and 1.7% Pb using a 2m mining width and 250 gm/t Ag cutoff.

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Geology

- Deposit hosted by Paleozoic Eagle Bay Fm comprising mafic to felsic volcanics, tuffs and deep marine cherts and argillites (see stratigraphic column). The package is bounded to the north by the Baldy Batholith, to the west by the Fennel Basalts and to the east by the Spapilem metasediments (see Figure 2).
- Deposit sits at the mafic/volcanic-sedimentary interface (see Figure 3). Genesis was during a period of uplifting and felsic volcanism. Sulphide rich fluids were evolved from the volcanic pile along vents and injected into the overlying unconsolidated deep water sediments (see Figure 4). Package has subsequently been overturned so that old volcanics are sitting on top of younger sedimentary units. The package now strikes northerly and dips approximately 50° to 60° east.
- Regional geology, based on unusual alkaline affinity of basalts (published in Exploration 86 by Hoy), is interpreted to be formed as a result of aborted rifting of a mature island arc.

Mineralization

- High grade lenses are found principally in a Muddy Tuff unit and consist of the following minerals in varying amounts: pyrite-tetrahedrite-chalcopyrite-sphalerite-galena+barite+arsenopyrite+chalcocite+bornite
- Gold and silver are mainly found as inclusions in the tetrahedrite
- There is a fair amount of early silica flooding which has resulted in high grade zones (up to 3.5% Ag)
- High grade zones are near the present surface (5-6m of overburden) which will allow open pitting, however deposit dips into the hillside, high stripping ratio to recover lower sections of ore body (15 to 1)
- Minnova believes the Samatosum deposit lies along the same stratigraphic horizon as Rea's discovery zone, however mineralogy and geology are different. (Others believe there are two separate horizons with different host rocks and different mineralogy - Hoy? Preto?)
- Minnova's success can be partially attributed to the policy of persistence and exploration using a well defined model and expert geologists as opposed to bandwagon exploration.

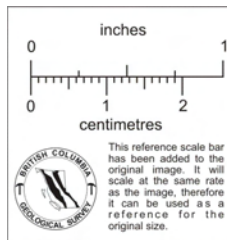
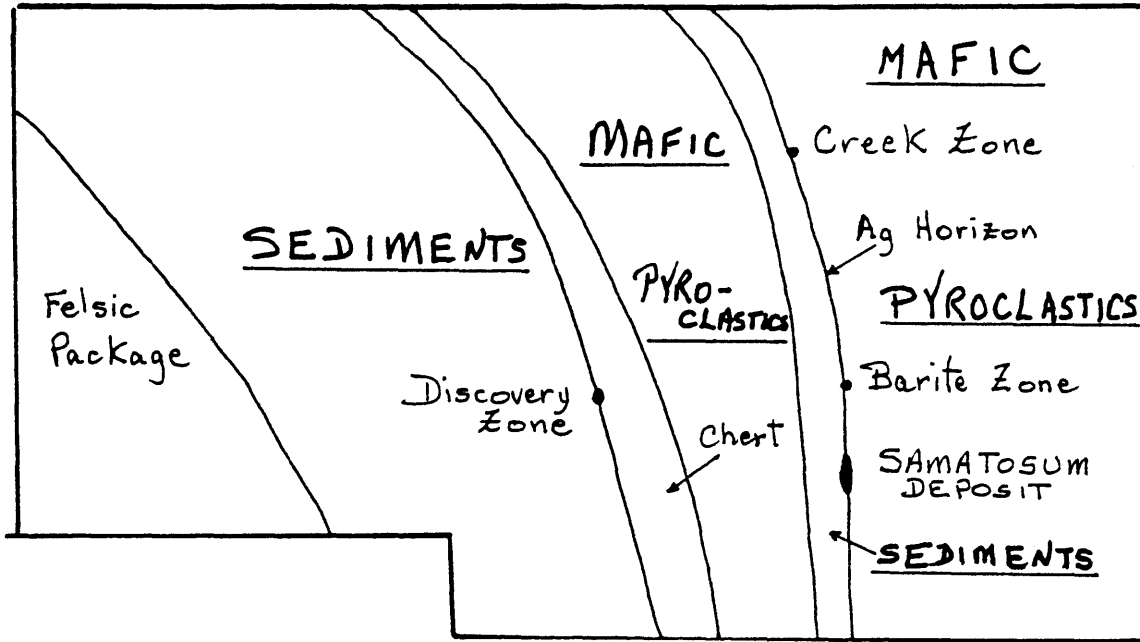
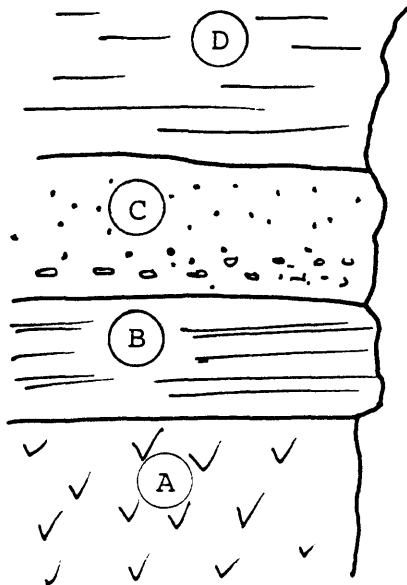


Figure 1. Property Geology



Stratigraphic Column 1



- D Argillites
- C Coarse sediments consisting of greywackes and conglomerates
- B Muddy tuffs. Felsic flows and pyroclastics, cackes, fine conglomerates, argillites and cherts. Strong sericite and clay alteration in places
- A Mafic volcanics and tuffs with a lower limestone horizon and an upper chert layer

(Relative position of strata shown; thicknesses not indicated)

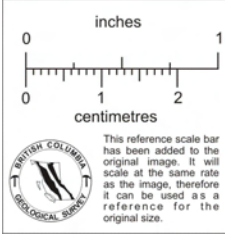
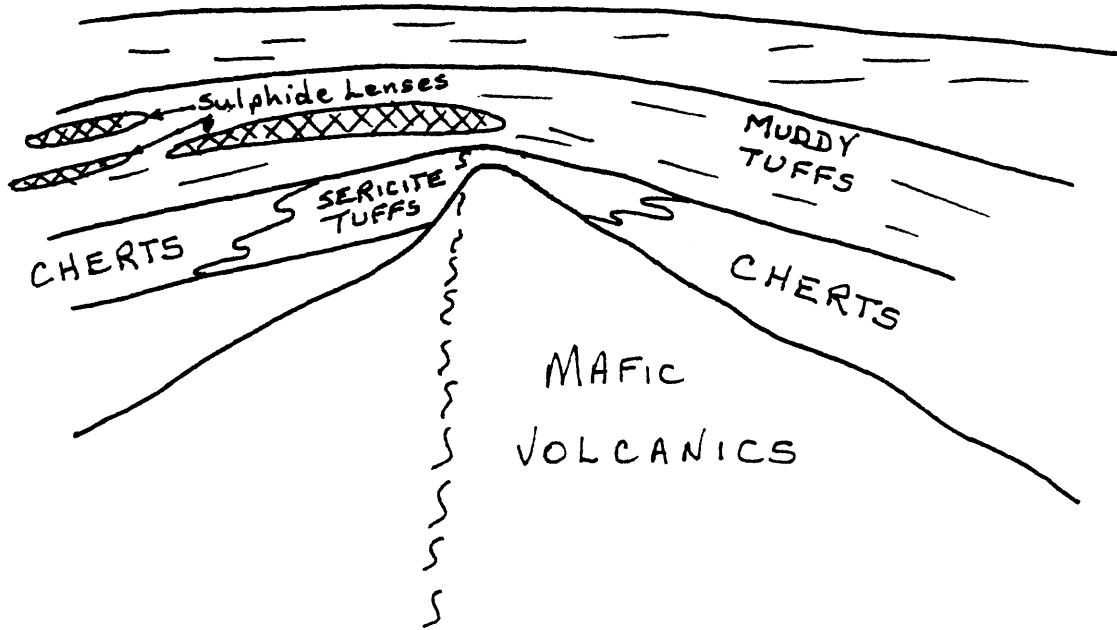
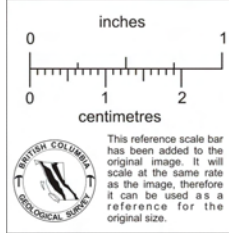


Figure 4.





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Figure 2.

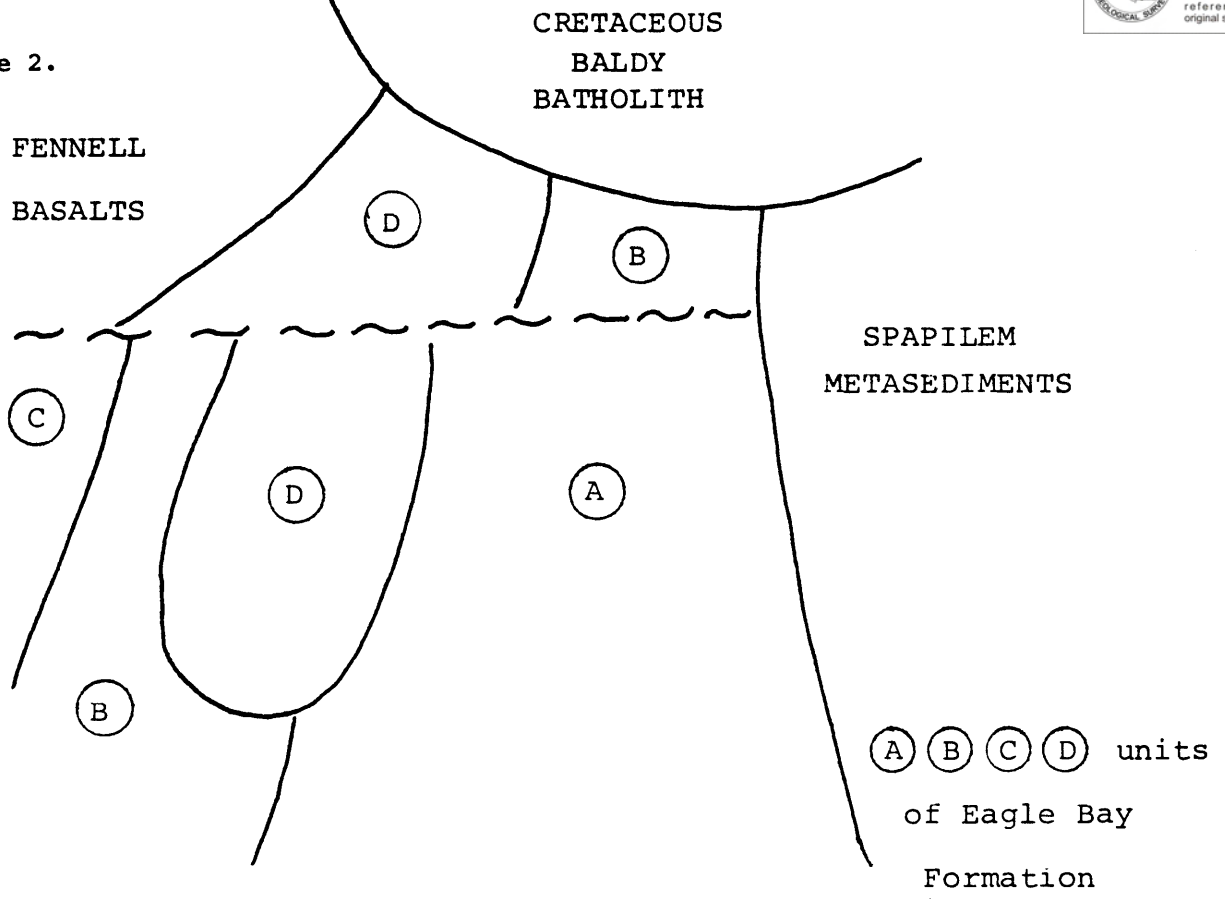


Figure 3.

