6000/909

Mining District File Summary Sheet

DISTRICT	Rosebud
DIST_NO	4010
COUNTY If different from written on document	Pershing
TITLE If not obvious	Stratigraphic controls on mineralization; October 5, 1997
AUTHOR	Vance R. Langstaff G.
DATE OF DOC(S)	1997
MULTI_DIST Y / (N?) Additional Dist_Nos:	
QUAD_NAME	Sulphur 7½'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Newmont Exploration Ltd.; Rosebud Joint Venture; South Zone; North Zone, East Zone
COMMODITY If not obvious	gold; silver
NOTES	Correspondence; geology; handwritten note 1 p.

Keep docs at about 250 pages if no oversized maps attached
(for every 1 oversized page (>11x17) with text reduce
the amount of pages by ~25)

SS: DP 9/10/08
Initials Date

DB:
Initials Date

SCANNED:
Initials Date

Revised: 1/22/08

Rosebud Mineralization

60001909 4010

34-30

60001909 4010

Newmont Exploration Ltd.
Rosebud Joint Venture

To: Randy Vance **Date:** October 5, 1997

Fr: George Langstaff

Subj: **Stratigraphic Controls on Mineralization**

The following excerpts from the "1995 Rosebud Mineral Inventory" by Muerhoff and Holmes bear on the question of whether stratigraphic controls are important in determining the position of ore in the Rosebud Mine and, by inference, in other related deposits.

South Zone:

- ore occurs as "stratabound stockwork (the result of preferential brecciation of the more brittle LBT members) and disseminations within several stratigraphic members of the LBT unit."

- "Higher gold grades are normally associated with . . . planar and convoluted-laminated tuff and vesicular, flow-banded tuff, and with . . . tuff breccia."

- In the north half of the south zone, "several mineralized, northeast-trending, high angle structures coalesce and . . . gold and silver mineralization occur within this zone along structures and within two preferentially mineralized lithologies. This zone . . . also contains a lower grade, yet presumably economic, stockwork and disseminated mineralized halo in nearly all stratigraphic members of the LBT."

North Zone:

- "Precious metal mineralization occurs on the hanging wall of the South Ridge Fault in the LBT unit and in the footwall of the fault in the Dozer Tuff and Basal Tertiary Sediments, and in the Auld Lang Syne Group, at a lesser degree."

East Zone:

- "The Rosebud East Zone . . . is characterized by pervasive silica replacement of the Dozer Tuff host rock."

Thus, in common with many other volcanic-hosted precious metal deposits, the Rosebud ore seems to be associated with a wide variety of stratigraphic and lithologic units and massive, brittle units seem to be more favorable than, for example, the lithic tuffs of the LBT. The examples of ore in the Rosebud Mine impose no stratigraphic constraints on the search for similar deposits nearby. Massive units occur throughout the stratigraphic section from the "Oscar andesite" to the porphyritic lava at the top of the Chocolate Formation and sills, plugs and flow domes are also widespread. The fact that rocks as different as Dozer Tuff and basal Tertiary sediments can host ore demonstrates that any rock can be mineralized if it is favorably positioned with respect to the hydrothermal plumbing system.