

DISTRICT	Rosebud
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COUNTY	Pershing
If different from written on document	
TITLE	Near mine Exploration Targets,
If not obvious	Rosebud mine Pershing County,
	Nevada, Spring 1998,
	12 June 1998
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MULTI_DIST Y / N?	
Additional Dist. Nos:	
QUAD_NAME	Sulphur 7½'
P_M_C_NAME	Rosebud Mine; Rosebud Mining Co.
(mine, claim & company names)	North Zone; East Zone; South Zone
COMMODITY	gold; silver
If not obvious	
NOTES	Geologic report; mine map; target maps;
	cross sections; resolution of diagrams poor
	17p.

NEAR MINE EXPLORATION TARGETS
ROSEBUD MINE
PERSHING COUNTY, NEVADA
SPRING 1998

FOR
ROSEBUD MINING COMPANY
BY
J. P. ROGOWSKI
12 JUNE 1998

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PLAN MAP WITH TOPO AND EXPLORATION TARGETS	
N E SECTIONS: 700 NE (NW-SE Facing NE)	
1000 NE	
1300 NE	
1500 NE	
1700 NE	
3250 NE	
NW SECTIONS: 1100 NW (SW-NE Facing NW)	
1850 NW	
2750 NW	

INTRODUCTION

The Rosebud mine is located in Sec. 24, T.34 N., R.29 E., and Sec. 19, T. 34 N., R.30 E., Pershing County, Nevada. The purpose of this study is to identify near mine exploration targets that will increase the present ore reserve. The method of study was to review mine and surface geology, study existing drill logs, and build 100 scale geologic sections and a plan map. Primary focus was on the South Ridge fault and no attempt was made to place stratigraphy on sections. Time spent on the project was 30 days over a period of two months.

In selecting exploration drill targets the following assumptions were made concerning the geology of the area:

- 1) The Rosebud orebodies are clear examples of epithermal mineralization.
- 2) The South Ridge fault (SRF) is one of the major controls on ore deposition.
- 3) The South Ridge fault has 650 to 750 feet of post-mineral normal displacement in a N55 to 60W direction.
- 4) Regional tilting has occurred along a N10E axis dipping +/-35 degrees east. This is the orientation of the mine stratigraphy.

Two target areas were selected on the above assumptions and two others based on previous drill intercepts using the above criteria to interpret their meaning. The four target areas are outlined on the 100 scale plan map of the mine area, and there are accompanying sections to facilitate geologic understanding. Targets 1A, 1B, 2 and 3 are numbered in order of priority. 1 Inch = 500 feet plan and sections are attached to this report, and 1 inch = 100 feet accompany this report are in attached pockets. Proposed drill holes to test the four targets are on the 100 scale maps and are preliminary only.

EXPLORATION TARGETS

TARGET 1A (The footwall portion of the South ore zone)

The South Ridge fault appears to have normal displacement in a N55 to N60W direction and has separated the North and East ore zones. This is based on three observations:

- 1) Drill hole trace element geochemistry indicates that the area directly above the East ore zone is essentially barren while geochemistry over the North ore zone extends upward from the orebody.
- 2) Last movement slickensides on the South Ridge fault at both the surface outcrops and underground measure N+/-57 W with a plunge to the NW.

- 3) If the North ore zone is moved in an up-slick direction 650 to 750 feet, it will lie directly over the East ore zone.

The above observations indicate that the South ore zone, which lies exclusively in the hanging wall of the South Ridge fault, will also have experienced similar movement to the North ore zone. If so, where is the footwall portion of the South ore zone? Target 1A is outlined on the 100 scale plan map and on Sections 700NE, 1000NE and 1100NW. It should be noted that there are several drill holes within the 1A target area that did not encounter mineralization. The holes that did have intersections are in the footwall of the South Ridge fault and this mineralization is highly siliceous similar to the East orebody.

Target 1A is designed to explore the possible footwall zone of the South orebody. It is recommended that this target be drilled from an underground station. Holes should be below and near parallel to the South Ridge fault. The holes should be designed to cut the mineralization near perpendicular to the N70E grain of the mineralized fracturing displayed in the existing orebodies. Drill stations can be accessed from present underground stopes.

TARGET 1B (Possible additional ore zones NE of the present orebodies)

Suspected additional ore zones may lie along the South Ridge fault NE of the mine area. Reasons for believing this are based on the following:

- 1) Many epithermal mining districts have dominant mineralized structures or shear zones that have several ore shoots localized along their strike length. These ore shoots often develop along similar elevation lines and have abrupt bottoms along a base elevation.
- 2) Regional tilting has taken place in the Kamma Mountains. In the mine area this has rotated the stratigraphy and the South Ridge fault along a N10E axis with a 35-degree tilt to the east.
- 3) Two holes in this target area are altered and have long intervals of trace gold and silver.
- 4) Several types of geophysical surveys indicate strong NE-SW trends in and around the mine area.

Using the above information, and postulating post-tilting mineralization indicate that the bottom of additional mineralized zones may lie along present elevations on the South Ridge fault. Following the contours would place new ore zones to the east of the East orebody. On the other hand, if postulating pre-tilting mineralization, the present ore zones must be tilted back 35 degrees to the west and the South Ridge fault re-contoured to find the base elevation of possible ore shoots. The South Ridge fault would then need to be rotated

back to the present position. This will place the exploration targets to the NE of the present mine.

The East target is not as favorable as the NE because two drill holes in the area are unmineralized and unaltered (96-362 and 96-363). If the search continues further to the East than these drill holes, the South Ridge fault will be cut off by the erosion surface.

The Northeast area is outlined on the 100 scale plan map as a large target with numerous proposed drill holes. This area is completely untested but two existing holes (RL-110C, at the SW edge of the target and RL-143C that did not reach the South Ridge fault) have strong clay alteration with trace amounts of gold and silver. Furthermore, in RC-110C near the South Ridge fault, the alteration is similar to near mine alteration. An IP anomaly exists in this area that is probably seeing the pyrite intersected between 200 and 400 feet in hole 143. This pyrite could be indicative of ore at depth. Vertical RC drill holes are recommended for this target area. Holes should be started on the SW side of the target along mine section line 2300NE and progress northeastward on parallel mine section lines. Anticipated depth to the area above and below the South Ridge fault will be 850 to 1150 feet. Additionally, it is recommended to test the South Ridge fault area in these holes with down hole IP and Resistivity (Newmont has a man able to do this). The hole spacing of 300 X 400 feet as shown on the 100 scale plan map is the maximum spacing recommended in order to avoid missing an ore zone similar to the existing orebodies. 200 X 200 and 200 X 600 have also been recommended by others working in the area.

NOTE: A word of caution concerning the location of the South Ridge fault. The contours NE of the mine abruptly turn from NE to SE. This is based on data from one drill hole (RS-420). The South Ridge fault in this hole is placed at the contact between the Tertiary and the basement Auld Lang Syne, but in reality, this may not be the case. The South Ridge fault may be some distance up the hole at 680 feet. If so, this would change the contour line locations but would not significantly change the 1-B target location. Both possibilities were investigated with the tilting model.

TARGET 2 (Feeder zones under the East orebody)

Drill holes 97-379C and RL-106C and many others intersected fairly high grade mineralization that appears to be along structures that could be feeders to the East ore body. All of these intersections appear to be narrow and may be of limited extent along strike. Mine development has opened excellent access to the 379 structure where it is mapped in the east zone drift as a narrow mineralized fault. This structure can be tested with core holes from underground as suggested on the 100 scale plan map and Section 1300NW. Section 1700NW shows the location of another possible feeder structure encountered in hole RL-106C. This significant mineralization occurs 200 feet below the South Ridge fault and is one of the few occurrences in the Auld Lang Syne basement. Underground access to this area at present is limited but can be drilled by extending some of the holes planned for the delineation of the North ore zone. This area, Target 2, should be tested with holes down dip and along the strike of these possible feeder structures.

TARGET 3 (A deep mineralized intersection in hole 96-356)

A relog of the intersection encountered in hole 96-356 indicates that the mineralization may be confined to a narrow structure. Alteration around this intersection is not like that found in the mine near existing orebodies. Several other drill holes in the area had disappointing results, but were not blank holes in that trace amounts of Au and Ag (0.0X) occurred over a large area. The Section 1500NE through drill hole 356 indicates that a large fault drops the South Ridge fault approximately 100 feet to the NW. Strike on this structure is unknown but assumed to have a NE direction.

It is recommended that this area be tested and a suggestion is presented on the plan map and on Section 1500NE. A 1,000 foot hole drilled from present mine access in a N55E direction along Section 1500NE and parallel to the South Ridge fault will test the 356 intersection. This hole will also test the NE fault and should also encounter any possible mineral in the hanging wall of the South Ridge fault. More drill holes will be necessary if significant mineralization is found. A drill hole to test below the South Ridge fault in this 356 area should also be considered.

ADDITIONAL OBSERVATIONS AND RECOMMENDATIONS

Drill Logs: Both the RC and core drill logs need cover sheets that show a graphic summary of each hole. This summary should include in simple form: faults, major stratigraphic breaks, and accumulated assays. This will be of great assistance to future geologists. Alteration can also be shown in color beside the graphic log.

Drilling of Exploration Holes on Sections: After completing several exploration holes, the geologists should be able to express what has been found in graphic form to further their understanding. Having holes drilled at random makes for confusion in interpretation.

Correlating Stratigraphy: Past and future drill holes may be impossible to correlate without a relogging program that will take several months. This may not be too expensive when compared to the cost of wildcat holes, and will be necessary if alteration, stratigraphy and fault drill hole data are to be entered into the mine database.

Mapping the Near Mine Surface: Numerous bedrock exposures can be found at old surface drill pads in the mine area and in the vent raise excavation. These have not been mapped or sampled, and doing this may facilitate the understanding of the ore zones and help in the correlation of the underground geology with the surface.

Cave Fault: During this study it has become apparent that the Cave fault encountered in both declines may be what gives the topographic expression and displacements that have led to the postulation of the Rosebud shear zone. Projecting the Cave fault from the declines to where it was encountered in near by drill holes place it about 1,000 feet above the South Ridge fault and near parallel to most of it. Where the South Ridge fault turns up, west of the

mine, it may be cut off by the Cave fault. The gouge zone associated with the Cave fault is also weakly mineralized.



















