

Memorandum

To : David M. Parkes
Nick D. Rose
Stephen L. Szabolcsy

From: Fritz F. Prugger

October 01, 1996


Re: Grizzly - Concepts.

Enclosed please find my concepts for the design and the operation of Grizzly. Please review these and let me have your comments at your earliest convenience.

Regards



Fritz F. Prugger

cc: Dick E. Arndt 
Don Hindy
W. Terry McLean
(for your information)

Total 5 pages

GRIZZLY - CONCEPTS.

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1. OVERVIEW.

Production	Mio tpy at 9% Pb+Zn Mio tpy at 6 % Pb+Zn
Workforce	Anvil Range Existing bargaining unit Commitment to training Mining contractor for the first two years
Access	Decline (Blind Creek valley) plus Shaft (production, south west of orebody)
Mining	Two separate horizons in the AB-Zone
Method	Room and Pillar with pillar robbing in retreat Benching (horizontal or vertical) Backfill for special cases
Flow of Ore	Scoop trams Ore passes Crushers Conveyors Surge bin Loadout conveyor Loading pockets Skip hoisting Headframe bins Truck transport to concentrator
Waste Handling	Decline conveyor to surface (initially) Underground backfill
Planning Concept	Simple Computerised mine planning
Operating Philosophy	Simple High level of automation Use of latest technology Minimum number of people, well trained
Ventilation System	Fresh air intake through the production shaft

Air exhaust through decline

Pumping Single pump station at a low point close to the shaft
Pump discharge line in the shaft

2. SURFACE ARRANGEMENTS.

Dry and change room :	Existing Grum facilities
Mine office :	Existing Grum Facilities
Warehouse :	Existing facilities at the Faro concentrator
Underground lamps :	Shaft collar
Shifters Office :	Shaft collar
Check in :	Shaft collar
Crew transportation :	Bus

3. PRODUCTION SHAFT.

3.1 Function

- Ore hoisting
- Transport of people at scheduled times only
- fresh air supply
- mine air heating
- pump line for mine water
- supply of electric energy through main power cable
- supply pipe lines for
 - Anfo
 - diesel fuel
 - hydraulic oil

3.2 Operation

- Hoist will have automatic control for hoisting as well as for transportation of people
 - no special hoist operator
- Trained hoist operator for shaft inspection and special trips only
- Hoist controls are located in the central control room at the shaft collar
- Central control for:
 - hoisting
 - pumping
 - ventilation
 - mine air heating
 - underground crushers and conveyors
 - surge bin
 - reclaim conveyor
 - loading pockets
 - headframe bins
 - electric stench gas warning system
 - all communications
- automatic greasing of

head ropes
guide ropes and
rubbing ropes
manual greasing of tail ropes

3.3 Layout

concrete headframe
tower mounted Koepe hoist
Thyrister control
multi rope installation
skip-cage combination
rope guides
rubbing ropes
cheese weights
clean-up ramp to shaft bottom
pumping from shaft bottom to pump station
fresh air fans
mine air heating

4. DECLINE.

4.1 Function

Air exhaust
Moving large equipment underground
Transporting bulk materials underground (cement for backfill)

4.2. Operation

The haulage conveyor will be left in place until sufficient room is available underground for placing waste as backfill

5. UNDERGROUND INFRASTRUCTURE.

Refuge stations
Electric stench gas warning system
Lunch rooms
Shifters office
Sanitary facilities
Underground communications
Power supply
Compressed air supply
stationary electrical compressors
mobile diesel and electric compressors
Ventilation system
auxiliary fans
ventilation ducting
air stoppages and overpasses
Underground shop
Underground warehouse (open)

Cement slurry plant
Underground cement storage

6. Development Mining

Main conveyor drifts in the footwall
Drop raises from surface for supply of backfill material

7. PRODUCTION MINING.

Room and pillar
Pillar robbing in retreat
Benching (vertical or horizontal with or without backfill)

8. BACKFILL.

Application	Only in areas of thick and high grade ore
Material	Gravel and rocks Some tailings instead of fly ash
Distribution	Drop raises from surface Hopper underground Dump trucks
Cement	Slurry plant is located near the bottom of the ramp Slurry will be added at the dump point

9. Other Matters.

Safety training
ongoing
safety meetings
mines act
"Incident Recall System"
"Management of Total Loss Control"

First Aid Training
Mine Rescue Training
Development of standard procedures for
operating
maintenance
Development of cost accounting