019608

Summary

Mining Reserves within Pit 2-2

Cut-off Grade	Tons Waste	Tons Ore	% Pb		% Zn	gm Ag
0.0	94 168 023	16 321 056	2.9	(7.7)	4.8	45.3
2.0	95 233 268	15 255 817	3.1	(8.2)	5.0	48.2
4.0	96 670 650	13 818 445	3.3	(8.7)	5.4	51.0
6.0	100 166 522	10 322 596	3.8	(10.0)	6.2	58.0
8.0	103 809 532	6 679 608	4.4	(11.7)	7.3	67.1
10.0	106 558 241	3 930 907	5.0	(13.5)	8.5	77.2
12.0	108 150 996	2, 338 162	5.6	(15.3)	9.7	85.9

Notes for GPS Users — March 7/78

(1) Collate basic data in order to prepare a drill log file (DLF). This should be available from drill logs. Attached is a list of basic data requirements.

(2) Create DLF. Determine how waste intersections are to be treated (i.e. "no value" or "0.0" which says you have x ft. assaying 0% & will be treated as such in the AVF calculations). Have the DLF list the length as well as the interval ("from - to") for each assay. (This will help later in checking other calculations). Rock code the DLF, i.e. to each waste intersection assign a corresponding rock code & to each mineralized intersection a different rock code. This will help in checking the AVF later to pick out potential AVF blocks in waste or waste blocks in mineralized areas. (See Rock Coding).

Check the DLF for accuracy: hole co-ordinates, in-hole survey measurements; dips; azimuths, assays & intervals, rock codes, etc. This must be correct as all further calculations are based on it.

(3) Rock coding : Serious consideration should be given to rock coding each block within the limits of the ultimate MIF. This is particularly useful in deliniating different geological rock units. eg. overburden, waste, dykes, ~~ore~~ mineralized rock types etc. IF the ore shapes are ~~tight~~ complex, rock coding can be used to deliniate "like ~~or~~ mineralized zones" which will greatly simplify the MIF interpolation procedure later.

Prepare detailed geological plans for each bench. The elevation given for each bench is the bench bottom. Assume the geology applies for the full bench height. For each bench indicate the appropriate rock codes & have the information digitized. Check several full scale digitized rock coded bench plans against the originals for errors. If you find no major errors check all remaining digitized & rock coded benches from micro maps.

(4) Create AVF : Select a block dimension. (This will have been done prior to rock coding.) The vertical dimension will correspond to the bench height or some multiple of it. The lateral dimensions need to be sufficiently fine to adequately describe the geology (Any block is either "ore" or "waste" for instance; it cannot be a mix.) Too small a block may lead to costly interpretation runs. Too large blocks may erase required geological features. A compromise approach can be developed, such as Crum, which uses ~~not~~ two sizes as required.

Carefully define AVF creation rules. Print AVF mini-maps & compare to rock coded plans & sections. (AVF blocks should not be in ~~waste~~ areas defined as waste on the rock code plans, etc.) Be sure all rock coding, DLF's & AVF's are compatible. Check positions of AVF blocks with plans & sections. with overlay full scale printouts.

- Select several blocks, determine piercing lengths & corresponding hole numbers & footages & calculate weighted grades for these blocks. Compare to computer values. For a given section(s) check that the total footage used in the AVF calculations equals actual ~~mined~~ footages as per DLF. This will help determine whether waste elements are being handled correctly.

To develop some feel for the effect of bench height on average grades, do a frequency distribution analysis of AVF block grades for several different bench heights. This may show unsuspected dilution with increasing bench height.