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TAURUS - HEARNE MINE

104P/5E

MEMO

AUGUST 22, 1983

TAURUS HEARNE MINE - CASSIAR

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Met Peter Mason - Geologist; Greg ? - Technician-Surveyor etc.

Dave Gunning? - Position? Thomas Edwards - Manager

Trenneman - General Manager - Consultant Etc.

Mine explored about 1964 - 68 with series of crosscuts at 100' - 200' intervals running north and south from 3600?' level. Veins were not drifted on.

Vein structures trend 85° - 90° dip to 70° south. Cut by 135°?/80°W? Dipping faults with left hand movement of 40 to 100'? Figure 1 Minor faults trending 160°?,common, have only small offsets. The decline encountered a thrust fault trending approximately north (340°??) dipping 25° east. A near vertical fault, trending 100°?, is referred to as a fault breccia zone - pinches and swells and contains up to 2'? quartz in places. Shows horizontal slickensides with much polished pyrite smear. Contains angular fragments pyritic alteration zone.

All faults appear to be post mineral. Much crushed quartz in places on footwall of thrust fault.

Veins vary in width from 1" to about 3' (possibly 4'), do not appear strong - commonly split or branch and contain horses and fragments

pyritic alteration zone rocks. What appears in places to be pyrite banded quartz consists of parallel altered wall rock fragments well mineralized with fine pyrite, tetrahedrite, little sphalerite, little chalcopyrite, with coarser cubic well crystallized pyrite. Main east trending vein is No 3 vein which is broken into three large segments by NW trending faults.

This vein structure has numerous gash veins running into the hanging and footwalls which sometimes contain good grade pyrite, tetrahedrite, sphalerite, sometimes VG mineralization. These gash veins trend about 045° - 065°. I observed the apparent relationship shown in Figure 2 and, after mentioning this indicated two stages of veining, was told by Mason that No. 2 vein zone consisted of gash vein structures but no through going vein.

In one of the better, wider, stronger sections of No. 3 vein on 3500 level the vein contains sigmoidal rock inclusions which are shaped similarly to the gash veins but in the opposite directional sense. See Figure 3.

Most veins rather than being a fairly simple structure as in the best portions of No. 3 vein are made up of several branches a few inches to a few feet apart and of 1" to 10" widths. In many places mining has slashed out to full width with considerable dilution.

Grade is only approximately proportional to sulphide content with pyrite possibly least important.

Average production grade is 0.16 ounces per ton, 0.20 ounces per ton or better in mine sampling is considered good. High assays are cut to 0.80 ounces. Veins are channel? sampled at 5' intervals. Calculated grades approximate production but individual assays are hard to duplicate.

The main decline starts at 3575 elevation and runs east approximately 500' at -15% grade. In this area, near 3500 level, the decline encountered a thrust fault striking (340°?) northerly and dipping about 25° east. There is considerable shattered quartz on the lower portion of this fault zone - probably crushed vein quartz rather than new introduction of quartz or mineralization. The decline was turned north to continue in the hanging wall of the fault and goes about 250 feet where a short west drift cuts the thrust fault and follows fairly strong vein quartz which is near vertical and continues west beyond the drift below the fault. The decline turns east and south where the thrust shows in the west wall. The decline seems to bend slightly east of south to stay in the hanging wall and reaches the 3375 level. The decline continues and turns east to provide a loading pocket for trackless haulage to surface. Stoping levels are tracked and use 1½ ton side dump cars and Mancha trammers and Eimco 12? mucking machines.

Mill fed from surface stockpiles by front end loader feeding onto conveyor belt to No. 1 and No. 2 screens - fines go to second conveyor to fine ore bin, coarse to gravel pit type jaw crusher followed by roller mill. Roller mill to be replaced by cone crusher (3"?). -3/8 crushed conveyed to 300 ton? ine ore bin. Fed to 5' x 8'? ball mill (4" balls). Oversize outflow to surface stockpile. Slurry to two jigs recovering 40% of gold - with much pyrite - remainder to 8 cell flotation unit - thence to thickener - thence to drum type _____ with concentrate into 1 ton plastic bags and shipped to Helena? Montana.

Jig concentrate cleaned by passing twice over table. Table con panned and cleaned. Much small metal tramp collected here - sent as con??

Overall impression is that structures are too weak and grade too low to be economic. Mill is rated 100 ton - milling 130 ton. Roller mill is mechanical bottle neck.

Many small vein structures a few inches wide in crosscuts - too much development on weak structures.

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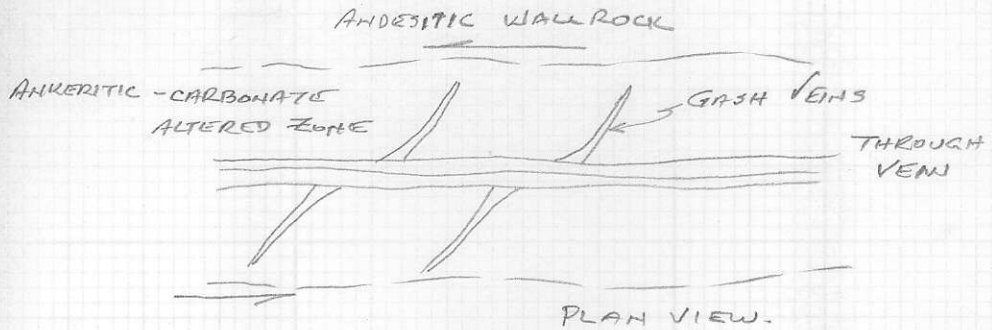
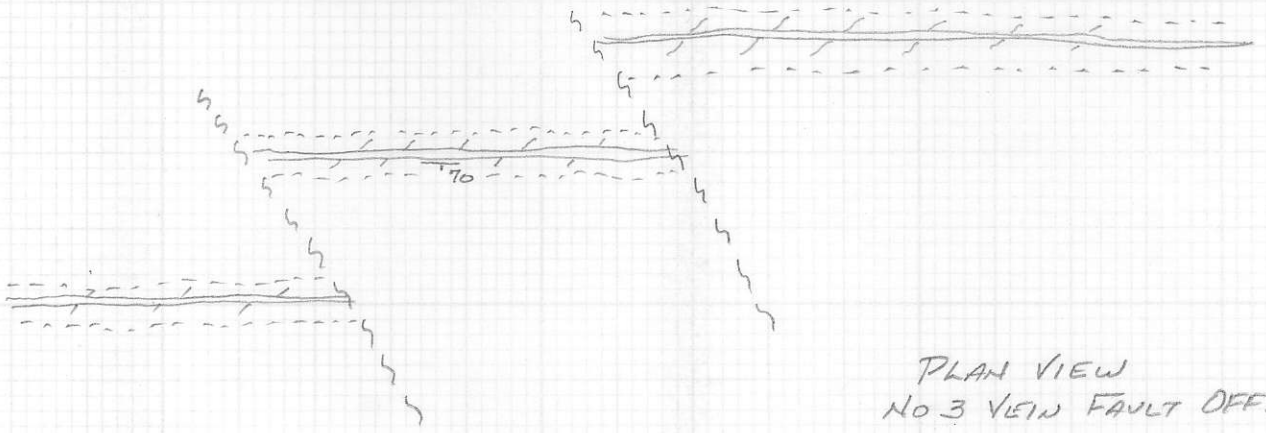


PLAN VIEW.

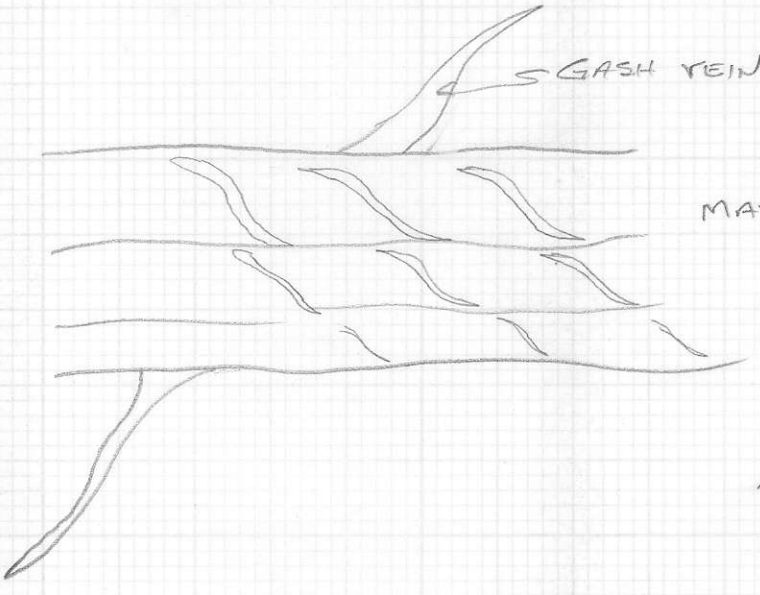
THROUGH VEIN SELVEDGES APPEAR TO BY PASS GASH VEINS INDICATING EAST TRENDING THROUGH VEINS ARE LATER STAGE CUTTING, OR FILLING, TENSION ZONE WITHIN PREVIOUS ALTERED ZONE CONTAINING TENSION FRACTURE FILLING GASH VEINS.

FIGURE 2



PLAN VIEW
NO 3 VEIN FAULT OFFSETS

FIGURE. 1



PLAN VIEW
No 3 VEIN DILATION

FIGURE 3.