

REPORT

on

Selection of Bore Sites for Messrs. H.E. & C.A. Brock
Mathinna District.

Three mines viz. Lowe's Show, J.E. Brock's Lease (1749/G), and the Old Boy's Mines were visited. Sites for bore holes were selected at the two former mines. The Old Boys mine was examined, but it has not yet been decided to have any bore-holes put down.

Lowe's Show.

This mine is situated on section 1655/G of 10 acres in the name of H.E. Brock, about 10 miles north of Fingal and 7 miles east of Mathinna.

The prospecting work carried out here during the last four years has revealed several quartz reefs. One of these gave good specimens of gold bearing quartz, and the greater part of the work has been carried out on this reef. The workings consist of three underlay shafts sunk on the reef, a vertical shaft in the hanging wall country, and a number of trenches. The underlay shafts are 30 to 40 feet in depth. The vertical shaft is situated 30 feet south of the reef and was sunk to 50 feet when water prevented further work.

The reef has a bearing of 240° at its eastern end and 255° at its western end. The dip ranges from 25 to 30 or 40 feet in 100 feet and from statements made it seems reasonable to assume an average dip of 35 feet in 100 feet. The best gold values were obtained in the eastern and central shafts. The reef ranges up to 15" in width but narrows to 3 inches going east from the eastern shaft. The narrowing occurs near a promised wall striking 350° and dipping high to the east, which was thought to be a fault but is probably a bedding plane.

It was desired to cut the reef at a depth of 100 feet beneath the part of it with the best values. Consequently a site for a bore-hole was selected at a point distant 64 feet from the central shaft in a southerly direction. Pegs were put in at the bore site and also at 35 feet from the shaft which is vertically above the point where it is expected to cut the reef. These two pegs will give the direction of the bore-hole. The angle from the vertical will be 16° (or $3\frac{1}{2}$ inches in 1 foot) as the site is 29 feet from the point above which it is assumed that the reef will be cut. The reef should be cut at a distance of 104 feet.

If this bore does not expose anything of value it is proposed to put down another further west to cut the reef at 100 feet depth. This bore should be aimed to cut the reef beneath the western shaft. It could be sited a similar distance (64 feet) south of the western shaft.

In the event of the above bore-holes being encouraging it is proposed to put one down to cut the reef at 200 feet deep. This hole should be sited 128 feet from the line of reef in order to have the bore-hole at the same angle of 16° from the vertical. Slight alterations could be made depending upon the average dip and the dip

at 100 feet depth of the reef.

J. Brock's Mine, Mathinna.

J. Brock holds four leases in the township of Mathinna viz. 1748/G of 20 acres, 1749/G of 11 acres, 1738/G of 5 acres and 1737/G of 5 acres, while applications have been made for two more 5-acre leases (1753/G and 1754/G).

In the north-western angle of 1738/G, a reef outcrops in Mangana Street. It has a general north-easterly bearing and the dip is to the north-west. An underlay shaft has been sunk near the western side of the street while old trenches occur in a township allotment to the south-west. The underlay shaft was sunk some 30 feet by Mr. Brannan and has been continued by Mr. Brock to 70 feet, the reef being followed. From the bottom of the shaft drives have been put along the reef to the north-east and south-west. In the north-east drive the quartz vein was up to 12 inches in width and associated with oxides of iron and it is stated that the reef gave good prospects of gold. At 20 feet from the shaft the quartz peters out as the reef channel bends to the north, but oxides of iron persist. In the south-west drive, the walls are at first 2 feet apart. Going south-west the quartz vein becomes narrow and turns more to the west. At the face a good hanging-wall occurs, but there appears to be quartz to the west of it.

In the north-east drive the strata ^{strike} at 340° and dip to the east while in the south-west drive it appears as though the dip is to the west, thus suggesting an anticline.

About 100 feet to the west-south-west another group of old workings exist. These consist of two shafts and an adit. The north-western of the shafts is said to have been sunk on a north-south reef dipping to the west at the surface, but turning over and dipping easterly at depth. It was apparently stoped to the south and it is stated that the stopes connected with the other shaft and adit. It is said that the reef of the values ceased against a wall bearing north-west. This is probably the same wall which is visible in the south-eastern shaft and which has a strike of north-west and south-east and a dip to the south-west. It would appear therefore that the adit did not intersect the reef. W.H. Twelvrees describes what appears to be the same workings as follows "Hen and Chickens". On the northern section of the Gold Estates, 68-930, a tunnel was at one time driven from the main road beneath where the Chinese store is now; and winzes were sunk on an east and west lode, which intersects a main north and south reef. It is reported that 3 oz. dirt used to be won from the Hen and Chickens workings but at excessive cost.

It was desired to test the north-east reef at a depth of 250 feet and also if possible the north-south reef in the same bore-hole. This would be a comparatively easy matter under ordinary circumstances but was complicated near these workings because they occur amongst township allotments with houses, gardens etc. The final choice for the bore-hole was on a block charted in the name of A. Cock and apparently belonging to Mr. Vincent. Assuming an average dip of 40 feet in 100 feet for the north-east reef a peg was driven at a point vertically over the probable point of intersection of the reef at the depth of

250 feet. Another peg was driven at the bore-site. These two pegs will give the direction for the bore-hole which is 14° south of east. The angle from the vertical will be 34° from the vertical or 8 inches in 12 inches.

The bore-hole will intersect the north-south reef in a distance of 116 feet (assuming it continues to this point and is more or less vertical) and at a depth of 101 feet vertically below the surface.

The length of bore-hole required to intersect the north east reef will be 280 feet, though it should be continued to 300 feet at least.

The direction of the bore-hole viz. 14° south of east is not quite at right angle, to the north-east lode but is sufficiently oblique to cut the reef efficiently.

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