The report covers operations at the mine since the inspection made in July, 1949.

MINING OPERATIONS;

Exploratory work has been concentrated on the 161 ft. level of the Main Shaft workings, and at the Open Cut shaft, 260 ft. to the east of the main shaft.

Main Shaft Workings:

161 ft. Level; West Drive: This drive has been extended west from the shaft to a total distance of 73 ft.

At 16 ft. west of the shaft a crosscut has been driven south for 21 ft.

At 49 ft. west of the shaft, the following work has been done:

a. A crosscut has been driven 10 ft. north, and from the end a rise has been put up to the stope below the 100 ft. level.

b. A short drive has been advanced to 13 ft. on a bearing of 283 deg.

c. A south crosscut has been driven to 16 ft., and at 11 ft., a winze has been commenced but has been discontinued on account of water.

The west drive has been extended from the south crosscut at 49 ft. to a distance of 73 ft. from the shaft.

161 ft. Level; East Drive: The east drive was commenced and has been advanced to 54 ft. from the shaft.

Open Cut Shaft:

At the 80 ft. level of this shaft a crosscut is being driven on a bearing of 314 deg. to come under the eastern shaft sunk on the north outcrop.

THE MINE WORKINGS;

Main Shaft Section:

West Drive at 161 ft. Level: The objective of this work was the location of the downward extension of the high grade ore worked below the 100 ft. level. As the ore shoot was not met in the drive, a rise was put up to the bottom of the stope, and ore was located on the south side of the rise. The dimensions of the ore shoot are 30 ft. long by 14 ft. wide. Underfoot, the orebody has been cut off by a fault dipping south at 47 deg., which has displaced the shoot about 7 ft. The south crosscut at 49 ft. west intersected the lode on the underside of the fault and a winze was commenced on good grade ore, but sinking has been suspended on account of water. This water is not heavy and could be handled by a whirler, delivering to the shaft.
The development in the winze is important and should be followed without any delay. The geological conditions are favourable the lode formation being well brecciated mudstone with small inclusions of haematite, with haematite of a more massive character showing on the south side of the lode.

The face of the drive at 73 ft. west is not encouraging to immediate extension, but should be considered at a later date if further examination at surface and at the 100 ft. level suggest the desirability of extending the drive.

**Main Shaft:** The main shaft section should be opened up at a new level at an interval of 50 ft., or 210 ft. from surface; this work should follow the sinking of the winze at 49 ft. west.

At the main shaft a crosscut is out 8 ft. to the north, and from the end a test hole has been drilled a further 5 ft. The sample obtained from this hole is stated to have shown two coarse colours of gold; this prospect should be investigated by extending the crosscut.

**East drive: 161 ft. Level:** The face of the drive is 54 ft. east from the shaft. For the first 30 ft. a strong, well defined shear plane, dipping north at 63 deg., shows in the back of the drive. At 20 ft. east a crosscut, started on the north side, shows thin haematite seams on the wall of the drive, with ferruginous mudstone beyond the haematite; the formation here is stated to carry several dwt. of gold and should be explored by extending the crosscut, and by rising on the θ values.

Between 20 ft. and 37 ft. east, is a crumple in the mudstone, with considerable crushing, on the north side of the drive. No gold has been seen in the drive, but a strong shear plane exists at 5 ft. or 6 ft. behind the drive wall, and its influence upon values at its intersection with the crumple should be investigated. At 37 ft. east, a defined shear, striking 52 deg., and dipping south-east at 63 deg. crosses the drive. Both drive walls show considerable movement between 37 ft. east and the face, which consists of crushed mudstone, the walls, apparently, bounding the shear zone.

**Open Cut Shaft:**

**North-West Crosscut:** This crosscut is being driven on a bearing of 314 deg. to the north outcrop; it is out 90 ft. and is in mudstone showing little change in appearance throughout; at 41 ft., a small fault, dipping north-west, crosses the crosscut. Connection will ultimately be made with the eastern shaft on the north outcrop; this shaft must be sunk, possibly 60 ft., to connect with the crosscut.

A drive put in by A. McDonald, extends from the shaft to a distance of 79 ft. east, in mudstone. At 32 ft. east, a crosscut driven 19 ft. north, connects with an old shaft at the west end of the open cut. At this point, two strong shears cross the east drive on a bearing of 13 deg.

At 54 ft. east, a rise has been put up to about 20 ft., and a small tonnage of ore appears to have been won here.

One reason that this east drive has not met lode formation is that, its position is south of the shear line on which the old shaft and the open cut are situated. The east end of the drive is approximately 15 ft. south of the vertical plane of the open cut, and it will be necessary to crosscut north to come under that working.

**FACTORS INFLUENCING GOLD OCCURRENCE.**

Geological work on the goldfield is developing the relation between gold occurrence and favourable beds. Mudstone, due to the ease with which it is crushed and brecciated, gives good conditions
for the circulation of solutions and consequently, the formation of ore shoots, the most favourable positions for gold deposition and the occurrence of shoots being those where bends, or folds, in the strike of the beds are intersected by shears, or zones of shearing. The degree of crushing may be intensified, and conditions for ore occurrence further improved by the intersection of the east-west shear system by cross shears, striking more or less north and south.

The Edna Beryl leases cover a considerable area of mudstone beds; two lines of east-west shearing are known, and the surface should be examined along the course of the shears for bends or sharp folds in the strike of the mudstones; these should be prospected.

RECOMMENDATIONS FOR DEVELOPMENT.

Resulting from conference with Mr. L. Jones on the development programme, the following work is recommended.

1. Main Shaft Section.
   
   161 ft. Level.
   
   a. Sink the winze at 49 ft. west of the main shaft, following the ore.
   
   b. After the winze has been sunk some distance, sink the main shaft 50 ft. to a total depth of 211 ft.
   
   c. Rise at 20 ft. east of the main shaft to prospect the ferruginous mudstone which has shown gold
   
   d. Extend the north crosscut at 20 ft. east as far as is considered necessary to locate any formation lying north of the shaft, in the course of which work, the width of the auriferous mudstone in the present end of the crosscut will be disclosed.
   
   e. Extend the short crosscut north from the bottom of the main shaft, to prospect the occurrence of colours of gold in the test hole from the end of the crosscut.

2. Open Cut Shaft.
   
   80 ft. level.
   
   a. Continue the north-west crosscut to a point under the east shaft sunk on the north outcrop.
   
   b. Sink the east shaft on the north outcrop to connect with the north-west crosscut.
   
   c. At 70 ft. east of the open cut shaft, crosscut north from the east drive to pass through the lode channel under the open cut.
   
   Further development will depend upon results of the work set out.

   
   Two boreholes might give useful information.
   
   a. A hole might be drilled from surface on the east outcrop where occurrence of gold has been reported by A McDonald in the course of surface prospecting.
   
   b. The suggested bore east of the open cut should be deferred until the north crosscut from the end of the 80 ft. level east drive has been driven, and information obtained from it to assist in placing the borehole.
Alternative to sinking the east shaft on the north outcrop to connect with the north-west crosscut, a vertical borehole might be put down to give the connection and the sinking of the shaft be deferred for consideration on completion of the borehole.

Development work carried out has not added to ore reserves. It has, however, indicated extensions of known ore, as well as the possible existence of new ore. There are on the leases, localities in which conditions for ore occurrence may be favourable, as indicated by geological factors. The occurrence of these points for exploration is encouraging, and development must be directed to the proving of the known occurrences of gold and the investigation of the points of potential importance. The general developmental position at the mine is definitely encouraging.

(signed) M.R. McKeown.

Consulting Mining Engineer.