RENEWAL AND ANNUAL REPORT
MCN523 & MCN1055
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Pine Creek 1:100,000 map sheet

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parasitic fold on the west limb of the Enterprise Anticline. Two similar folds were reported by Arnold (1988) occurring on the east limb of the Kohinoor Anticline and can be observed in Jensens and Kohinoor Adits. It has also been observed that for both the Enterprise and Kohinoor Anticlines the western limb is moderately dipping but that the east limb is steep to overturned with the dip becoming more moderate, distal to the axis.

2.3. Mineralisation

Sulphide minerals identified at Pine Creek include pyrite, arsenopyrite, galena, sphalerite, chalcopyrite, bismuthinite, tetrahedrite, covellite and marcasite. Gold occurs in places as discrete accumulations (i.e. free gold), or as inclusions in arsenopyrite, pyrrhotite and as intergrowths with bismuthinite in massive pyrrhotite. Some pyrrhotite is decrystallised to pyrite and may contain gold (Sultana 1990).

Generally gold is associated with quartz and sulphide mineralisation. Some of the massive reef quartz may contain up to 80% sulphides. Average sulphide content is from 10 -30%. Sediments may also contain fine disseminated sulphide. Gold and sulphide mineralisation is not confined to quartz and good gold values can be obtained from samples devoid of quartz. Conversely some quartz is totally barren of gold and sulphides.

All gold mineralisation on the Southern Leases appears to be structurally controlled. Although the various workers in the past have identified different types of mineralisation, broadly speaking there are only two styles present in this area. The first is related to folding and includes saddle type veins and ladder veins. The second is related to faulting and shearing and includes quartz veins and shear zones associated with various structures. Shear and fault hosted mineralisation are of greater importance in the Southern Leases area. This has been recognised by past workers and has been used to direct exploration over these leases.

3. EXPLORATION HISTORY

Gold is believed to have been discovered at Pine Creek in 1869 during the construction of the Overland Telegraph. The first claims were filed in 1872 by John Lewis over a rich reef which he named the Eleanor for his sister. During the subsequent gold rush from 1872 to 1896 mostly Chinese and a few Europeans worked the alluvial and hard rock claims on the Southern Leases. Numerous shafts and underground workings were confined to mineralised zones along hard rock outcrop and were developed from that period to 1906 and can still be seen today.

In 1936 a geophysical survey (potential ratio) was conducted as part of the Aerial Geological and Geophysical Survey of the Northern Territory. This survey indicated the presence of high resistivity zones within the Southern Leases.

In 1987 Dominion Gold Operations conducted an exploration programme consisting of detailed 1:250 scale geological mapping, 1:5000 scale photomapping and excavation, mapping and sampling of nine costeans totaling 1.057 metres on MCN523. The work for this programme is recorded in Vooy and Shepard 1988.

In 1989 Pine Creek Goldfields entered into an Option Agreement with Dominion. Subsequently an exploration programme consisting of 1:500 scale mapping and 15 diamond drillholes for 1,112m was undertaken over the Eleanor and Elsinore prospects. Results for this work are given in Steinert and Yeo 1990.
During 1990-1991 5 costeans for a total of 226m and 78 percussion holes were carried out in the vicinity of the Elsinore workings and along the Kohinoor Anticline. The results of this work are reported by Fawcett 1991.

Twelve RC holes were drilled during May 1992. Results are recorded in Fawcett 1994a.

Limited mining of gold-bearing alluvial deposits on MCN523 was undertaken by Silver Coin Mining and Prospecting during 1992-1993 dry seasons. The alluvial material was trucked to Silver Coins existing concentrator facilities on MCN313 for treatment. The areas mined were progressively rehabilitated under the direction of the Department’s Environment Directorate and Pine Creek Goldfields Rehabilitation Supervisor.

4. 1993 - 1996 EXPLORATION

During 1994 Pine Creek Goldfields carried out a programme of RC drilling and minor costeanning. Eight RC holes were drilled at South Enterprise to test an area with very little drill data, for oxide mineralisation over the projected southern extension of the Enterprise Anticline.

Four holes were drilled in an area known as the Republic, to test the southern extensions of the Kohinoor Anticline and Jensens Fault. This area is located due south of the town dump and MR817.

Two 40m angle holes were drilled on the east side of the town dump to test an area of workings and quartz veining which has been previously untested. This zone of quartz appears to be fault related.

Part of one costean (G3) was excavated on MCN523 resulting in 152m of trenching. Samples were taken at 2m intervals resulting in 76 samples.

Drillholes were sampled at 2m intervals using a splitter mounted on the drill rig. Drilling was undertaken by Thompson Drilling (NT) using a GK-850 reverse circulation drill with an oversized 4.5 inch face sample hammer. Samples were submitted to Assaycorp (Pine Creek) for analysis. Results can be seen in Appendix A-C and Plates 2-8.

5. PROPOSED WORK

The proposed work programme for the next year will consist of monitoring of the rehabilitation that has been carried out over the area.