KEN DAY PTY LTD

EXPLORATION LICENCE 2770

MARGARET DOME – NORTHERN TERRITORY

FINAL REPORT: YEAR 6 (1986/87)

FOR AREA RETAINED UNDER TENEMENT APPLICATIONS

(MCNs 1628 – 1635)

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DECEMBER 1987
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**APPENDIX 1**  -  ASSAY SUMMARY

**FIGURE 1**  -  LOCATION MAP SHOWING TENEMENT BOUNDARIES

**FIGURE 2**  -  GEOLOGICAL MAP SHOWING TENEMENT BOUNDARIES

**FIGURE 3**  -  COSTEAN LOCATIONS

**FIGURE 4**  -  DRAINAGE AREAS WITH GOLD SHOWS

**ENCLOSURE 1**  GEOLOGICAL AND TOPOGRAPHICAL MAP, EL 2769 AND EL 2770
1. INTRODUCTION

Exploration licence 2770 is located approximately 150 km southeast of Darwin on the former southern portion of the Prices Springs Pastoral Station. The licence area is now incorporated in the Douglas Pastoral Station, which is owned by Messrs Henry, Walker, Bailey and Wright.

EL 2770 was granted on 31.5.81 for a period of 6 years. In 1986, the exploration licence was reduced from 2 graticular blocks to 1 graticular block.

This is the final report for the area retained under tenement applications MCN's 1628, 1629, 1630, 1631, 1632, 1633, 1634 and 1635.

2. LOCATION AND ACCESS

EL 2770 is located in the old Cullen Mineral Field (now part of the Northern Mineral Field) outside the southern boundary of the Mt Wells Policy Reserve and to the east of the Golden Dyke Dome (Fig.1 and Enclosure 1).

EL 2770 has its northern boundary on 13 degrees 35'S, its eastern boundary on 131 degrees 34'E, its southern boundary on 13 degrees 36'S and its western boundary on 131 degrees 33' E. Its area is 1 graticular block, ie: 3.3 sq km.

The western, northern and eastern boundaries of the area retained under tenements coincide with the exploration licence boundaries, whilst the southern boundary lies 880m south of 13 degrees 35'S (refer Figure 1).

This exploration licence covers the southern portion of the Margaret Dome, the sister to the adjacent Golden Dyke Dome.

Access to the area is via a track leaving the Mt Bonnie Road to the south of the Golden Dyke Mine. This road passes through the northern section of EL 2769 and ends at the northwest corner of EL 2770 adjacent to the eastern boundary of EL 4818.
3. DESCRIPTION

This exploration licence consists largely of rugged hillsides cut by narrow high energy streams. Chemical weathering and erosion of the Zamu Dolerite sills, however, has resulted in relatively wide valleys comprising of a rich red brown soil.

Vegetation throughout the area shows variation with changes in geology. Predominantly sparse woodland containing Ironbark and Eucalypts with very little groundcover, except for speargrass, characterises the Lower Proterozoic metasediments of the Margaret Dome. Open woodland comprising Woollybutt, White Gum and Iron Bark trees and a higher proportion of shrubs and groundcover occurs in the richer soils derived from the weathered dolerite sills.

4. GEOLOGY

The stratigraphy of the area applied for under tenements comprises the Lower Proterozoic middle and upper Koolpin Formation and the overlying Gerowie Tuff of the South Alligator Group. The Gerowie Tuff is intruded by the upper sill of the Zamu Dolerite. To the north of the exploration licence, the middle sill of the Zamu Dolerite is exposed in the core of the Margaret Dome. A detailed stratigraphic column of the overlying lower section of the middle member of the Koolpin Formation is recorded in Jettner. (1986)

The southeasterly plunging axis of the Margaret Dome passes through the northeastern corner of EL 2770 and forms the major structural feature. To the south of the core of the dome, smaller domal structures of wavelengths 100-150 m have been observed, indicating a rapid undulation of the axial trace (Jettner, 1986).

Refer to Figure 2 and Enclosure 1 for Geological Maps

5. PREVIOUS EXPLORATION

Previous investigations of the EL 2770 region were carried out by Jensen et. al (1916) and Schultz (1981).

Ken Day Pty Ltd began investigations on the exploration licence in 1985/86 (Jettner, 1986). The company prospector made several traverses across the exploration licence looking for old workings and favorable geology for gold occurrence. As a result of both ground and aerial reconnaissance, work was concentrated on sampling gossans, banded iron formations and nodular chert units within the Koolpin Formation in the region retained under tenement applications.
6. EXPLORATION FOR YEAR 6

All major drainages were sampled for gold. The method involved extracting twelve litres of alluvium, screening to minus 2cm, and panning, with a visual inspection for gold. To aid sampling, 27 costeans were cut across drainage systems (labelled A1 to A27 in Figure 3). Unfortunately due to a misunderstanding, many of these costeans were located just to the north of the exploration licence area.

Visible gold was located in costeans A19, A12 and A24. The gold in costean A19 was a single large colour, 3mm in diameter and similar in appearance to Sandy Creek and Margaret diggings gold. Two drainages were therefore known to yield gold, and these are shown as Areas 1 and 2 in figure 4. The source for these gold shows is probably associated with either the Zamu Dolerite or the banded iron formation - sulphidic chert on the northern boundary of the exploration licence.

Six trenches were also dug along favourable hardrock outcrops for sampling purposes. (T1 to T6 in Figure 3). Unfortunately, most of these were also inadvertently located outside the exploration licence.

Of particular note was a 4 metre wide zone of "pigeon's egg" chert and banded iron formation which was sampled adjacent to costean A12. Whilst the results were low, they were anomalous, and indicate the possibility of locating ore grade in a more favourable structural setting.

An unusually large gossan which is at least 6m wide and 1000m long (from point A to point B in Figure 3) occurs in sericite rich Gerowle Tuff and appears to be comformable to bedding. This is known as the 'Nord Gossan' as it was previously investigated by Nord Resources by means of bulldozer trenches. Excavator trenching by Ken Day Pty Ltd revealed that owing to the very shallow 15 degrees dip to the east, the Nord trenches failed to locate and test the subcrop. While surfaces analyses were generally disappointing, the extent and unusual nature of the gossan justifies further work.
Conclusions

The conclusions that can be drawn from this year's exploration of EL2770 are listed below:
- No significant areas of mineralisation were encountered.
- Gold is being sourced in the vicinity of the northern part of the exploration licence.
- The 'Nord Gossan' has significant potential for mineralisation and warrants further investigation.
- A zone of banded iron formation and 'pigeon's egg' chert around the southern boundary of the Margaret Dome is anomalous for gold. Exploration for similar occurrences in a more favorable structural setting is warranted.

7. REFERENCES


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Date: in ppm unless otherwise stated.