YARDARINO MINING NL

FINAL REPORT

EL 8398 - JUBILEE WEST

TENNANT CREEK DISTRICT

NORTHERN TERRITORY

PERIOD 1 JANUARY 1994 TO 31 DECEMBER 1998

COPYIES:

1. Department of Mines and Energy - Darwin.
2. Yardarino Mining NL - Perth

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Report No. 8398-5
29 January 1998

OPEN FILE
## TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. INTRODUCTION</td>
<td>3</td>
</tr>
<tr>
<td>2. EXPLORATION HISTORY</td>
<td>3 - 4</td>
</tr>
<tr>
<td>3. CONCLUSIONS AND RECOMMENDATIONS</td>
<td>5</td>
</tr>
</tbody>
</table>

## LIST OF FIGURES

<table>
<thead>
<tr>
<th>FIG NO.</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tenement Location Plan</td>
</tr>
</tbody>
</table>
1. **INTRODUCTION**

This report is the Final Annual Report for Exploration Licence 8398 - Jubilee West and summarises the exploration activities from 1 January 1994 to 31 December 1998.

The tenement falls on the Tennant Creek 100,000 map sheet and is approximately 15 km WNW of Tennant Creek (Fig 1). The tenement comprising two sub-blocks was granted to Yardarino Mining NL for a period of three years on 24 December, 1993. A deferral of reduction of the area of EL8398 was granted on 15 April 1996 and the renewal of the licence for a further two years was granted on 15 December, 1996.

The tenement was subject to a joint venture agreement with Orion Resources NL from 15 June, 1995 until 15 December, 1995.

2. **EXPLORATION HISTORY**

During the first twelve months of tenure a 50 line km ground magnetic survey was completed over the entire tenement on a 100 x 10m grid pattern. A base station was not used for this survey and consequently levelling problems were encountered with the contoured data. The survey showed however a well defined magnetic “bulls-eye” anomaly of approximately 40 to 50 nT at grid co-ordinate 20100N-18700E. An interpretation of the magnetic data by Magdata Consultants selected this anomaly as a high priority target.

In June 1995 the tenement was included in a joint venture package farmed out to Orion Resources. On termination of the farm out agreement in December 1995, it was discovered that Orion Resources had not undertaken any follow up field work.

Following withdrawal of Orion Resources, Yardarino immediately initiated field programs to further evaluate the magnetic anomalies adjacent to the Marylane Shear in the north-east of the tenement. During the twelve months ended December 1996, Yardarino completed vacuum drill sampling over the discrete magnetic high delineated in the 1994 ground magnetic survey. The vacuum drill lines were also extended to the east in order to follow up a spot 7 ppb Au result reported by the previous tenement holder Roebuck Resources from a single line of vacuum drilling along a north-south fenceline track.

The 100 x 25m spaced vacuum drill holes confirmed that the magnetic high is located in an area underlain by prospective Warramunga Group siltstones and greywackes. A broad area of anomalous gold values (3-5 ppb Au) was found to overlie the magnetic anomaly. A detailed ground magnetic survey was then conducted over the “bulls-eye” magnetic anomaly in order to provide data of satisfactory quality for magnetic modelling prior to RC drilling follow up.

During the twelve months ended December 1997 the ground magnetic data was geophysically modelled, in order to determine a location and depth to the magnetic source, and first pass drill testing undertaken with two vertical RC holes.

Consultant geophysicist Bevan Dockery was contracted to evaluate the ground magnetic data acquired by Tesla-10. An initial attempt at calculating magnetic source locations and depths using the Euler deconvolution method on the grid data produced spurious shallow results due to noise sourced by iron-enriched surface scree. Consequently a low pass Butterworth filter was applied to smooth the data prior to modelling.
Euler deconvolution applied to the smooth grid data produced solutions for the sphere and pipe models at 81, 92 and 96m depths and for the dyke model at 47 and 66m depths. The Analytic Signal was also calculated from the smoothed total magnetic intensity data.

The report recommends that the best source location for testing of the origin of the magnetic response is the pipe model centre at 18,699E-20,110N at a depth of 81m.

In October 1997 two RC holes were drilled for 230m. The drilling was undertaken by Boart Longyear of Adelaide using a UDR1000 mark 5 drill rig with a 900 cfm/350 psi on board Sulair Compressor and 5½ in hammer. The two holes (TKC-5 and 6) were collared 80m apart based on the pipe model location responses and drilled vertically to access the nature of the magnetic source.

Drill cuttings were collected at 1m intervals and 4m composite sampled for assay. A KT-5 magnetic susceptibility meter with a measuring range in $10^{-3}$ SI units were used to log each 1m sample. The 4m composite samples were assayed by Assaycorp of Pine Creek for Au, Cu and Bi with select samples of magnetite ironstone also assayed for Pb and Zn.

Transported, lateritised siltstone and ironstone, including pisolitic material and vein quartz, were encountered in the upper 4m and 9m of holes TKC-5 and TKC-6 respectively. Enhanced magnetic susceptibility readings sufficient to explain the surface noise evident in the ground magnetic survey were recorded from this transported material.

Light brown coloured sticky clay of probably residual origin directly underlies the transported ironstone debris in both holes. The elevated gold values detected in the vacuum sampling program appear to be sourced from this clay horizon. Beneath this clay a typical lateritic weathering profile of ferruginous mottled clay, saprolitic clay, saprolite and finally fresh rock below the water table, was intersected.

Magnetic susceptibilities were very low in the mottled and saprolitic clay horizons but slightly elevated once true saprolite was encountered. The Euler deconvolution sill solutions at depths of 47m and 66m appear to correlate well with the increase in magnetic susceptibility readings encountered at the clay/saprolite interface.

The biggest increase in magnetic susceptibility readings was recorded below 90m in hole TKC-5 and 83m in hole TKC-6. This increase corresponded with the intersection of a dark grey massive to weakly foliated siliceous magnetite rock containing trace amounts of very fine grained disseminated pyrite. These intersection depths are in very good agreement with those predicted from the geophysical modelling.

Both drillholes penetrated vertically some 30-40m into the top of the magnetite ironstone body. Geochemical assays were low throughout apart from an elevation in copper values recorded in both holes at the saprolite/fresh rock interface.

Due to prioritising of projects resulting from difficult market conditions, the Company conducted no work for the year ending December 31st 1998.
3. CONCLUSIONS AND RECOMMENDATIONS

The two hole RC drilling program to test the "bulls-eye" magnetic anomaly at Jubilee West was successful in locating the anomaly source. The source is a siliceous magnetite rock enclosed within foliated ferruginous siltstones.

Massive magnetite +/- quartz typically forms the upper part of a Tennant Creek style ironstone body. The siliceous magnetite rock encountered at Jubilee West is thus interpreted as the upper part of a large complex ironstone pipe replacement body. Although geochemical values are low this is not unexpected as in all known deposits economic gold mineralisation is concentrated towards the base of the ironstone pipe or occurs in stringer zones either in the footwall or the brecciated ironstone margins.

The ironstone margins were not tested by the vertical RC holes nor did the holes penetrate to sufficient depth to test for mineralisation in the footwall of the ironstone. Consequently a deep angled diamond hole designed to drill through the margins of the ironstone body well beneath the magnetite zone intersected in the RC drilling is required.

Downhole magnetometer logging of this angled hole followed by offhole magnetic modeling is then recommended in order to determine the 3D location of the magnetic source body prior to further diamond drilling.
YARDARINO MINING N.L.
FLATLAND GROUP
TENNANT CREEK

TARGET ZONES

FIG 1.