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EL 2373 PERNATTY

**PARTIAL RELINQUISHMENT REPORT FOR THE PERIOD
ENDING JANUARY 1998**

Submitted by

Havilah Resources NL
1998

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MINES and ENERGY
RESOURCES SOUTH
AUSTRALIA



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Mines and Energy Resources South Australia, PO Box 151, Eastwood, SA 5063

Enquiries: Customer Services

Mines and Energy Resources South Australia
191 Greenhill Road, Parkside 5063

Library

Telephone: (08) 8274 7522

General Enquiries

Telephone: (08) 8274 7500

Facsimile: (08) 8272 7597

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TENEMENT: EL 2373, Pernatty
TENEMENT HOLDER: Havilah Resources NL

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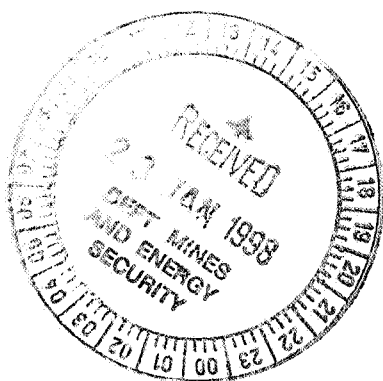
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Havilah Resources NL

RELINQUISHMENT REPORT
FOR PORTION OF EL 2373
PERNATTY AREA
SOUTH AUSTRALIA



Compiled by
Dr. Chris Giles
Exploration Manager
January 1998

HAVILAH RESOURCES NL
235 GLEN OSMOND ROAD, FREWVILLE, SA 5063

Mines & Energy SA

R98/00053



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1.0 INTRODUCTION

EL 2373 (Pernatty) was granted to Havilah Resources on 26 June 1997 for a period of twelve months. After study of open file information available in PIRSA records and reconnaissance field work, portion of EL 2373 was relinquished as shown on Figure 1 (referred to below as "the area").

The relinquished portion covers an area of 798 square kilometres, lying between Pernatty Lagoon in the west and Lake Torrens in the east (Figure 2). It is largely covered by the rocky slopes of the Arcoona Plateau and its western boundary is situated roughly 15 kilometres east of the Mount Gunson copper mining centre.

The area was originally applied for because it was known to be underlain by prospective geology and had previously only been explored on a very broad scale. The chief targets sought were Olympic Dam and Tunkillia style mineralisation in Gawler Craton basement rocks.

2.0 GEOLOGICAL SETTING

The area lies on the Stuart Shelf, a geological province characterised by essentially flat lying Neoproterozoic sediments overlying a variable basement of Gawler Craton rocks. Only the younger members of the Neoproterozoic sequence, namely the Simmens Quartzite Member and the Corraberra Sandstone Member of the Tent Hill Formation, crop out in the area. Information concerning older rock units and the Gawler Craton basement rocks is only known from deep drillholes of which there are more than ten within the area.

Compilation of the drillhole data shows that older Neoproterozoic rock units of the Tregolana Shale, Tapley Hill Formation and Beda Volcanics are widely distributed in the subsurface. The latter form a flood basalt sequence that gradually thickens eastward across the area towards the Torrens Hinge Zone, which is likely to represent the original rifted source area (Cowley, 1991a).

These rocks generally rest unconformably on the Mesoproterozoic Pandurra Formation, which crops out extensively in the Mount Gunson area along the Pernatty upwarp zone on the western side of Pernatty Lagoon (Cowley, 1991b).

3.0 PREVIOUS EXPLORATION WORK

Early drilling in the region was carried out by Stuart Bluff Minerals in 1969-70 and later by Otter Exploration NL. In both cases the exploration model was Mount Gunson style copper mineralisation along the Pandurra surface between the Pandurra Formation and the unconformably overlying Whyalla Sandstone.

Following discovery of the Olympic Dam deposit in 1975, a joint venture between Seltrust, Geopeko and Carpentaria Exploration Company Limited carried out widespread exploration over a large part of the Stuart Shelf including roughly the western two-thirds of the area. They completed four percussion holes (PRL 3, 4, 5, 24) and six diamond drillholes (SAR 2, 3, 4, 10, 10a, 10b), the latter continuing on as tails from the percussion pre-collars. The deepest percussion drillhole was PRL 24 (463.9 m), while the deepest diamond drillhole was SAR 10b (503.8 m), which was wedged from PRL 24 at 146.1 metres. Both drillholes bottomed in Pandurra Formation. No significant mineralisation was found in any of the drillholes.

At the same time, Western Mining Corporation Limited, who held similarly large tenements on the Stuart Shelf, explored roughly the eastern third of the area. They completed one drillhole, NHD 1, which intersected gneissic basement rocks from 503.7 metres until the end of the hole at 643.2 metres. Notably in this hole Umberatana Group rocks directly overlie the basement, with the Beda Volcanics and Pandurra Formation being absent, suggesting the existence of a basement high. The basement is described as "a homogeneous quartz-feldspar-biotite-chlorite rock with an indistinct to moderately developed gneissic texture, and porphyroblastic feldspar."

Elevated copper values were returned from the lower Umberatana Group, averaging 1201 ppm Cu for the interval 453-458 metres and 870 ppm Cu for the interval 452-468 metres. Only slightly anomalous Cu values were obtained from the basement, with an average of 110 ppm Cu in the interval 540-598 metres.

4.0 CURRENT EXPLORATION WORK

Given that the primary exploration target is Olympic Dam and Tunkillia style mineralisation, it was important to determine the depth to prospective basement and thus earlier drilling data was crucial. This was researched in available open file reports in the PIRSA library. As summarised above, potentially prospective basement rocks intersected in drillholes within the area were greater than 500 metres deep, being covered by significant thicknesses of Neoproterozoic and/or Mesoproterozoic sediments.

Reconnaissance field work confirmed that quartzites of the Neoproterozoic Tent Hill Formation formed rocky upland over most of the area. Sand plain flanks the quartzite in a narrow strip running down the eastern side of the area. Calcrete and other suitable surface geochemical sampling mediums were largely absent over the entire area.

Interpretation of available BMR aeromagnetic data did not reveal any obvious features of interest, notwithstanding the limitations of the data. Those features and trends evident appear to be related to deep seated causes, consistent with the depths to basement indicated by the drilling.

5.0 CONCLUSIONS

In view of the depths to basement revealed by earlier drilling and the lack of obvious magnetic features of interest, the area is considered to have low prospectivity for the types of targets sought. It was therefore recommended for relinquishment, so that more effort could be devoted to the retained area, which is considered to have greater potential.

6.0 REFERENCES

Cowley, W. M. 1991a. Beda Volcanics and Backy Point Formation of the eastern Gawler Craton. Report Book No. 90/16, PIRSA.

Cowley, W.M. 1991b. The Pandurra Formation. Report Book No.91/7, PIRSA.

Unpublished Company Reports held in Open File at PIRSA :

1969-1970 SML 315 Stuart Bluff Minerals PIRSA Env 1230

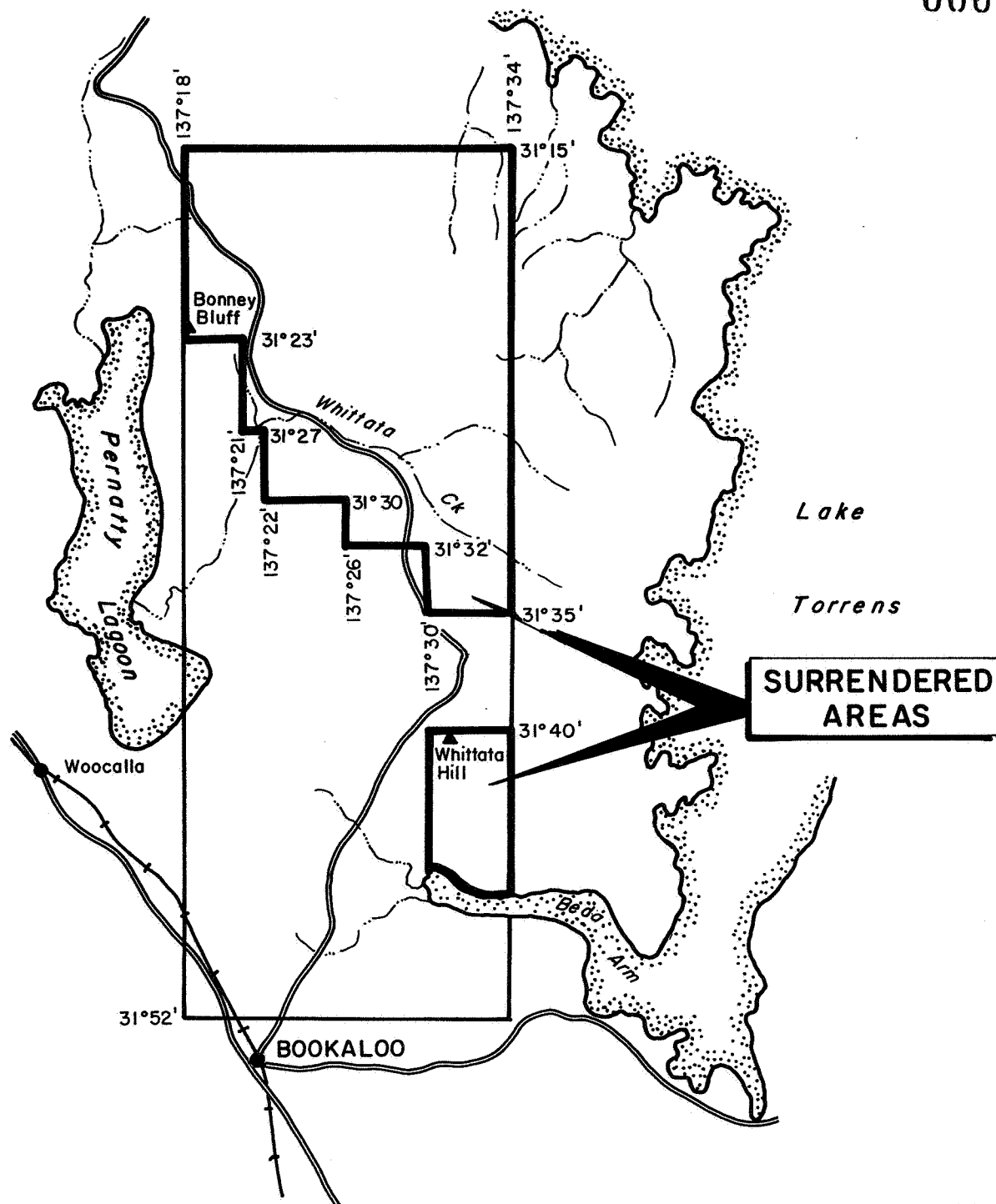
1974-1975 EL 154 Otter Exploration NL

1976-1978 EL 226 Australian Selection JV PIRSA Env 2703

1978-1983 EL's 389,676,1046 Australian Selection JV PIRSA Env 3245

1983-1986 EL 1205 Carpentaria Exploration Company Pty Ltd PIRSA
Env 3693

1975-1986 EL 1316 Western Mining Corporation Pty Ltd PIRSA
Env 6562



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LOCATION PLAN

EL 2373 - PERNATTY

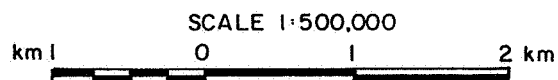
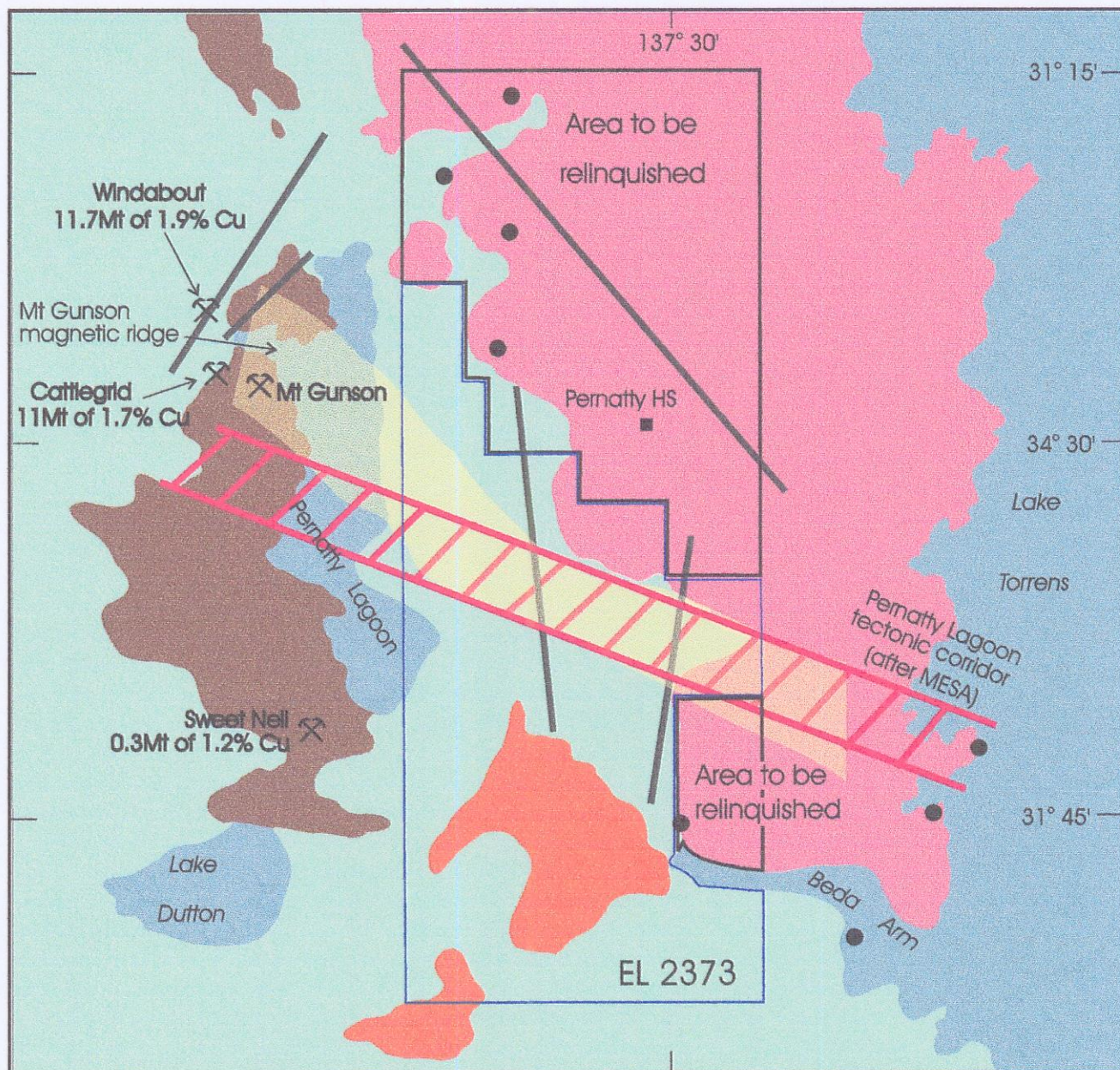


Figure 1



NEOPROTEROZOIC



Tent Hill Formation



Whyalla Sandstone

MESOPROTEROZOIC



Pandurra Formation

● Drillhole Location

— Fault

0 5 10
km



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PARTIAL RELINQUISHMENT

EL 2373 - PERNATTY

GEOLOGY

Figure 2