

# **EL 15 / 1997 - ARTHUR RIVER**

## **RELINQUISHMENT REPORT**

*Prepared for:*

**Morritt Holdings Pty Ltd**

**05 August 2002**

*Prepared by:*

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## 1. EXPLORATION BACKGROUND and PHILOSOPHY

In 1997 research investigations by Dr Robin Morrith of Pacific-Nevada Mining Pty Limited identified the Proterozoic in western Tasmania as being both highly prospective for gold and copper deposits, and largely underexplored.

Pacific-Nevada undertook a major reassessment of available State geological, magnetic and gravity data sets. This project led to the identification of major deformational and structural events which affected the Proterozoic. Tenement acquisition strategies focused on regions where these trends were interpreted as intersecting.

Pacific-Nevada identified five north-west trending crustal features which were termed 'focal structures' (FS), and assigned the names (south to north) *Macquarie Harbour FS*, *Savage River FS*, *King Island FS*, *Devonport FS*, and *Launceston FS*.

Also identified was a series of structural extension zones (deformational zones) which trended generally N-S, thereby cutting the focal structures. These extensional zones included the Arthur Metamorphic Complex, the Smithton Zone, Montagu Zone and Mary Hall Zone.

Principal target styles were:

- Proterozoic iron formation hosted gold (Homestake)
- Proterozoic iron formation hosted Au-Cu pipes (Selwyn)
- Proterozoic Cu-Au shoots or pipes (Tennant Creek)
- Proterozoic stratiform Cu (Michigan)

EL 15/1997 was acquired because previous exploration had identified substantial magnetic features within the Proterozoic in the licence area, which conformed to this overall regional exploration philosophy.

## 2. WORK COMPLETED

To follow up previous work completed by Pickands Mather in the 1960s and Geopeko in the 1980s on the Nelson Bay River anomaly, Pacific-Nevada undertook the following work in 1999:

- (a) Interpretation of recent AGSO aeromagnetic data. Results are presented in report:

*“Temma Area, NW Tasmania, Geophysical Modelling”, by N Hungerford, Flagstaff GeoConsultants, for Pacific-Nevada, August 1999.*

Modelling of the data indicated a strongly magnetic body dipping 60° to the west (see Fig 7).

Hungerford concluded:

*“The Nelson prospect covers the strongest magnetic anomaly and indicates a considerable volume of magnetite. As a gold-copper target this prospect warrants the most attention, at least from a geophysical perspective”.*

- (b) Relogging and some reassaying of NB 401. Results are presented in report:

*“EL 15/97 Arthur River Annual Report to 5.11.99”, by NJ Turner Geological Services, 28 October 1999.*

In June-July 2000 it was decided to further test the Nelson Bay River anomaly with two drill holes, the target being gold mineralisation hosted by Proterozoic iron formations or breccia pipes.

The full results of this drilling program are presented in the report:

*“EL 15/1997 - Arthur River. Report on Nelson Bay River Drilling Program. June-July 2000”, for Pacific-Nevada Mining Pty Ltd, by LA Newnham, 08 August 2000.*

**In summary**, both drill holes intersected a 40 m wide discordant iron rich dike like structure containing abundant quartz-carbonate-magnetite-pyrite-garnet-amphibole assemblages with minor chalcopyrite and silver. **Gold values were very low.**

The unit is interpreted as a pyrometamorphically altered (skarned) mafic or ultramafic dike, possibly emplaced along a fault zone which provided a conduit for the alteration processes.

Apart from low order greenschist metamorphism, the host sediments are not substantially altered.

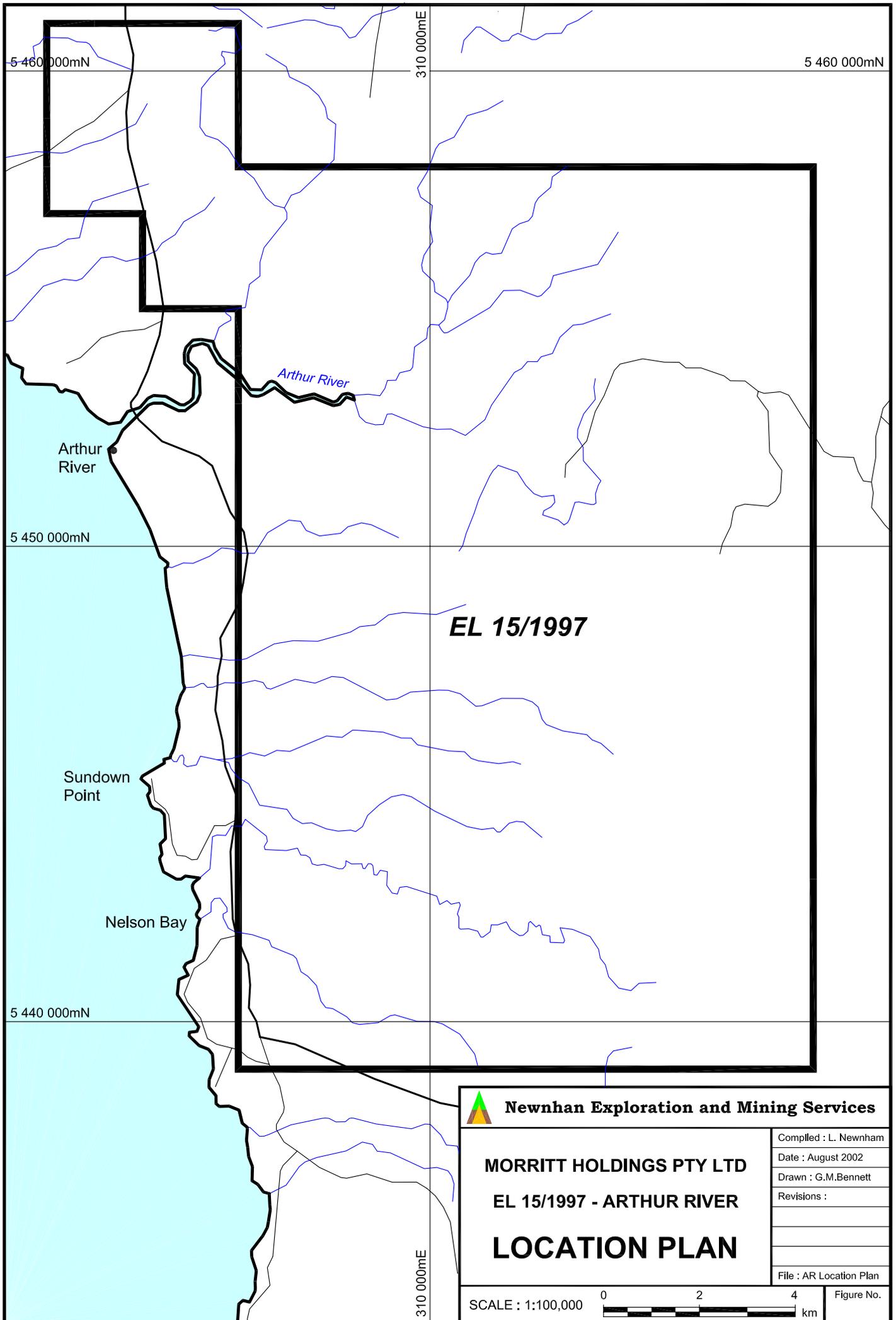
A possible zonation of alteration is suggested by the fact that the intersection in the northernmost hole, NBR 001, was dominated by magnetite-amphibole, whilst in the southern hole, NBR 002, the assemblage was dominated by carbonate-pyrite.

Aeromagnetic data indicates this dike is approximately four kilometres long and, as such, represents a substantial pyritic-ironstone formation in the Proterozoic sediments. The three drill holes completed to date represent a relatively shallow test of 200 m strike length of this body. Further drill testing may be warranted.

Following various corporate manoeuvres in 2001, Pacific-Nevada elected to withdraw from the project which then reverted to Morritt Holdings Pty Limited who subsequently entered into a joint venture agreement with Greenstone Resources NL in 2001.

Following a review of existing data, Greenstone elected to withdraw from the project.

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 **Newnhan Exploration and Mining Services**

**MORRITT HOLDINGS PTY LTD**  
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**LOCATION PLAN**

Compiled : L. Newnham
Date : August 2002
Drawn : G.M.Bennett
Revisions :
File : AR Location Plan

SCALE : 1:100,000  km

Figure No.