

Allegiance Mining NL

**EL 14/2001
HEAZLEWOOD AREA, TASMANIA**

PARTIAL RELINQUISHMENT REPORT**31 January 2002****02_4643**

Partial Relinquishment Report - EL 14/2001 -
Heazlewood Area
Allegiance Mining NL*; Newnham Exploration and Mini
Newnham, L.A. EL14/2001

MINERAL RESOURCES		
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1. **TENURE:** (fig 1)

Principal tenure details for EL 14/2001 are:

- *holder:* Allegiance Mining NL
- *application date:* 17 April 2001
- *grant date:* 14 September 2001
- *expiry date:* 14 September 2006
- *original area:* 108 sq. kms.
- *area to be relinquished:* 47 sq. kms.
- *area to be retained:* 61 sq. kms.

2. **EXPLORATION OBJECTIVES:**

EL 14/2001 was acquired by Allegiance Mining NL because of its potential prospectivity for "Avebury style" nickel sulfide deposits.

Avebury style deposits are essentially nickel sulfide skarn deposits formed as a result of extensive serpentinisation (alteration) of mafic and ultramafic formations by major hydrothermal events capable of providing the chemical and physical environments necessary to remobilise, transport and deposit nickel sulfides and iron oxides (magnetite).

The genesis and characteristics of these deposits can be considered under the necessary requirements for source rocks, alteration processes and transport/entrapment. The prospectivity of an area can be assessed on this basis.

3. **ASSESSMENT OF AREA:**

The Avebury model requires the following:

- granite < 3-4 kms of current surface
- extensive alteration (serpentinisation) of nickeliferous

- mafics (boninites ?) or ultramafics (dunites) with resultant production of magnetite
- evidence of extensive hydrothermal processes, including addition of sulfur to the system
 - development of substantial structures within the hydrothermal environment to facilitate movement and focusing of hydrothermal fluids
 - presence of trap sites for mineralised fluids and subsequent preservation (non erosion) of these sites

Applying these fundamental requirements to EL 14/2001, the following can be concluded:

(a) the Meredith Granite slopes across EL 14/2001 to the NW and in the northern half is interpreted as being in excess of 6 kms below current surface (Fig 2).

(b) much of EL 14/2001 is underlain by ultramafics. District magnetic data suggests the Heazlewood River Complex (HRC) and the Mt Stewart Complex (MSC) are linked beneath relatively shallow cover. The MSC appears to be extensively serpentinised, but in the north where the granite is deeper, the HRC appears less altered with most serpentinisation as described in the literature being confined to shear or fault zones.

The distribution of magnetite formed during serpentinisation, as opposed to magnetite rich formational layering, is unclear from current data. A large magnetic anomaly beneath the western half of the Huskisson Syncline remnant remains unexplained. The area west and south of Mt Jasper which is underlain by Cambrian volcanics and sediments is magnetically anomalous. The MSC is not as magnetically anomalous as might be expected. This may be due to the shallowness of the granite and resultant magnetite destruction/depletion.

(c) evidence of extensive sulfurous hydrothermal processes is derived from the distribution of known deposits in the district. Within EL 14/2001, the extensive (but minor) sulfide mineralisation present at Mt Jasper, Mt Wright, Heazlewood, Mt Stewart and Godkin Mines, can be interpreted as part of a SW extension of the major hydrothermal system through Bischoff, Mt Magnet and Cleveland. Sulfide occurrences are less common in the northern half of the licence.

(d) there are two major structural trends recognised in this area - NW and NNE. The NW trend structures host the Lord Brassey, Mt Wright and Heazlewood Mines, whilst the NNE trend hosts the Mt Stewart Mine and possibly influence the Jasper Mines. The Godkin Mines are possibly associated with a thrust structure along the eastern margin of the Huskisson Syncline.

Airmag and radiometric data highlight a significant NNE trending structure which passes (from south to north) through the Mt Stewart Mine, along the western margin of the Huskisson Syncline and north between the layered ultramafics to the west and the Cambrian basalts to the east. The large airmag anomaly beneath the Huskisson Syncline lies immediately east of this structure.

(e) the most likely preserved trap sites exist in the southern section of the licence where the serpentinised ultramafics remain roofed beneath either Cambrian basalts and sediments or Palaeozoic sediments of the Huskisson Syncline remnant.

On the basis of available evidence, the two most prospective areas within EL 14/2001 for Avebury style nickel sulfide deposits are:

- large aeromagnetically anomalous area beneath the western side of the Huskisson Syncline remnant
- magnetically active ultramafics beneath Cambrian basalts and sediments in the southern half of the EL, principally in the general Mt Jasper area.

4. RECOMMENDATION:

The following is recommended:

Relinquish approximately 45% of the licence area

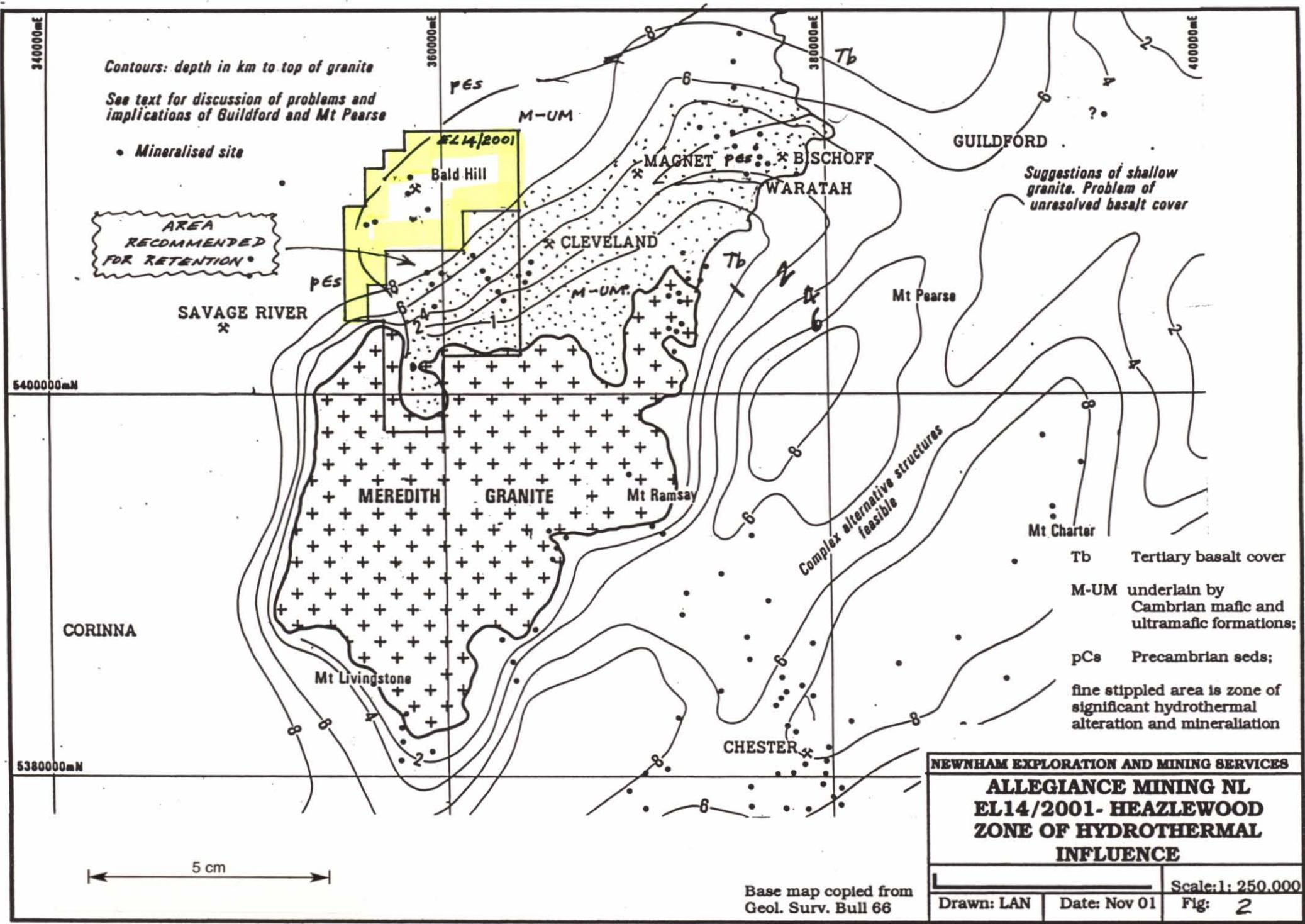
The northern and part of the western section of the licence are interpreted as having low prospectivity for Avebury style deposits within a practical depth of surface.

The area recommended for relinquishment is shown on Fig 3. Relinquishment will focus future effort on the remaining prospective areas.

5. FINAL REHABILITATION REPORT:

Allegiance Mining NL did not undertake any field work on that area of EL 14/2001 to be relinquished. Thus no environmental impacts or disturbances requiring rehabilitation were incurred.

688008



Contours: depth in km to top of granite
 See text for discussion of problems and implications of Guildford and Mt Pearce

• Mineralised site

AREA RECOMMENDED FOR RETENTION*

Suggestions of shallow granite. Problem of unresolved basalt cover

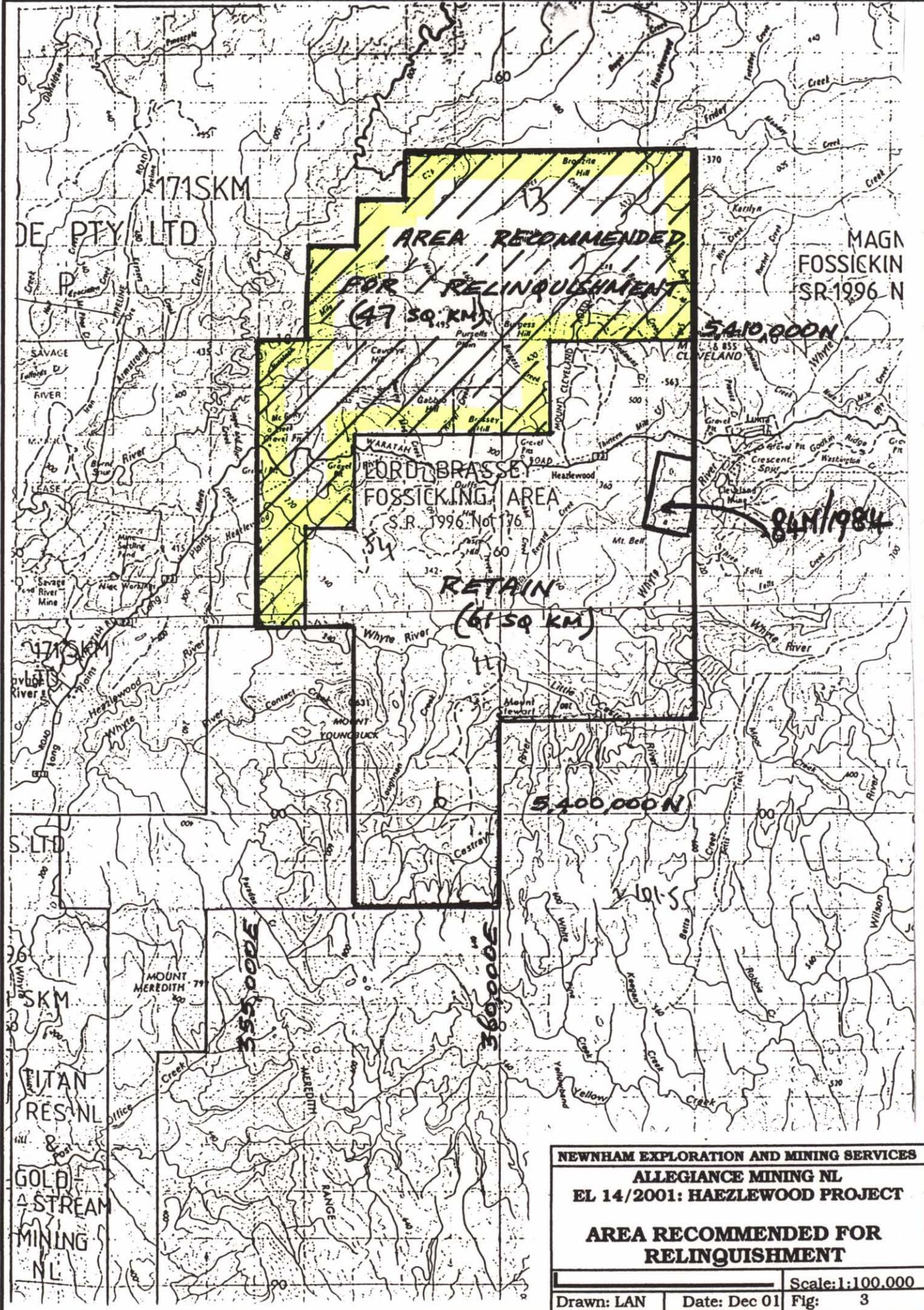
Complex alternative structures feasible

NEWNHAM EXPLORATION AND MINING SERVICES
ALLEGIANCE MINING NL
EL14/2001- HEAZLEWOOD
ZONE OF HYDROTHERMAL INFLUENCE

Scale: 1: 250,000
 Drawn: LAN Date: Nov 01 Fig: 2

Base map copied from Geol. Surv. Bull 66

5 cm



NEWHAM EXPLORATION AND MINING SERVICES
ALLEGIANCE MINING NL
EL 14/2001: HAEZLEWOOD PROJECT

AREA RECOMMENDED FOR RELINQUISHMENT

Drawn: LAN	Date: Dec 01	Fig: 3
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Scale: 1:100,000

