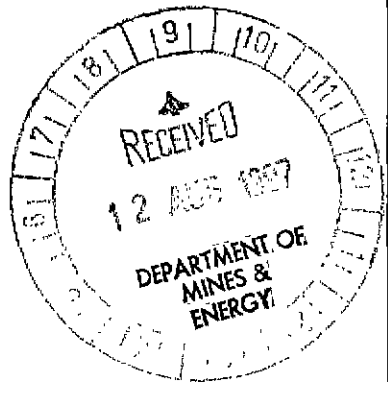
# OPEN FILE

## FINAL REPORT
## EL9261

10TH NOVEMBER 1995 – 14TH MAY 1997

KELLY PROJECT
1:250,000 TENNANT CREEK




**NEXUS MINERALS N.L. – *Licensee***

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*Nexus Minerals N.L.*

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## 1. INTRODUCTION

Nexus Minerals N.L. is the registered holder of EL9261. The licence was granted on the 10th November 1995 for four years and consists of 2 blocks totalling 6.46kms² located in the west central sector of the Tennant Creek 1:250,000 sheet SE53-14, Northern Territory, some 50kms WNW of Tennant Creek. The licence adjoins the WSW boundary of EL8246 of which Nexus has a 215% interest (refer Figure 1). Exploration Licence EL9261 has an annual minimum Mines Department expenditure commitment of $4,000. A total of $614 has been spent by Nexus Minerals N.L. A late application for exemption from expenditure has been lodged as a result of the failure to secure a joint venture partner prior to the anniversary date. Unfortunately Nexus Minerals N.L. received conformation in late May 1997 that the licence was cancelled by the Northern Territory Department of Mines on 14th May 1997. This has caused great inconvenience to Nexus as final preparations were being made for field programmes and acquisition of geophysical data from private and public domain sources.

## 2. EXPLORATION ON EL9261

### 2.1 10TH NOVEMBER 1995 – 9TH NOVEMBER 1996

Nexus Minerals conducted and extensive review of the literature on the Tennant Creek Goldfield and available previous exploration data collected by past operators covering EL8247 (Warrego West Project), EL9006 (Warrego South Project) and EL9261 (Kelly Project). Over the area covered by EL9006 WMC (1990/1993) as part of their exploration activities on former EL7151 attempted a reinterpretation of the NT Geological Survey mapping and BMR aeromagnetic survey in conjunction with a limited gravity survey over the NE sector of EL8247 to the east of the T2 Anomaly (see Figure 1). The results of the activities concluded the area contained Warrego Granite and unprospective for mineralisation. North Star Resources (1993/1994) conducted a reprocessing of aeromagnetic data, reinterpretation identifying 17 targets for ground follow up on EL8247. Thirteen of these targets were followed up by ground magnetic surveys (see Figure 1). Over EL9006, North Star Resources identified a broad regional magnetic trend striking NE occurring in the central block of EL9006 (see Figure 1). North Star Resources interpreted NWN trending structure transecting the northern extremity of the central block intersecting NE and NNW structures in the northern block (see Figure 1). Over EL9261, North Star Resources identified a strong E-W lineament transecting the NE Block, to the south of the Premier Mine and possible extending into the Red Bluff Mine (see Figure 1). Two WNW trending linaments approximately 1km apart were identified over the SW Block of EL9261. The northern lineament intersects the T7 magnetic anomaly identified by North Star near the northern boundary of the SW Block of EL9261 within EL8247 (see Figure 1).

Known Au, Cu, Bi mineralisation in the Tennant Creek District is controlled on linear corridors trending 250°, 285°, 290°, 295° associated with ironstone bodies (lenticular, ellipsoidal or pipelike) composed of magnetite – hematite cutting across sedimentary structures within the Proterozoic Waramunga Formation (greywackes). Consequently Nexus Minerals N.L. has focused its exploration priorities to evaluating magnetic anomalies defined by aeromagnetic/ground magnetic surveys associated with cross cutting structures. Therefore anomalies defined by North Star Resources on EL8247 are being reassessed to plan drilling programmes on EL9261. The following is taken from Rafty & Hemming (1996) summarising the exploration on EL8247 having relevance to planned exploration on EL9261.

*"Nexus Minerals N.L. conducted a two phase exploration effort on EL8247 during 1995. The first phase concentrated on an extensive review of the literature on the Tennant Creek Goldfield and available previous exploration data collected by past operators covering the Warrego West Project. The second phase concentrated on data collection involving 3,469m of shallow RAB drilling of six identified magnetic anomalies (T1-5,7) located in the eastern sector of EL8247.*

*The results of the first exploration phase has indicated very little detailed ground exploration has occurred in the area of EL8247. Re-interpretation of aeromagnetic and ground magnetic data by North Star Resources had indicated there are 17 discrete magnetic anomalies not readily explainable by previous interpreted Warrego Granite covered by Cainozoic sediments. North Star Resources N.L. had interpreted WNW trending structures to intersect the anomalies demonstrating a possible relationship to known mineralisation along strike to the ESE (see Figure2) (Figure 1 of this report).*

*The results of the second phase of exploration confirmed significant although low grade Au (≤8ppb), Cu (≤410ppb), Pb (≤85ppb), Zn (≤125ppb) and Bi (≤9ppb) mineralisation in the 0-50m vertical depth range from 4m composite sampling of 89 holes (WWR1-89) declined at 60° to grid N (AMG).*

*Interpretation of the results has indicated the anomalous mineralisation (≤1ppb Au; ≤10ppm Cu, Pb, Zn; ≤1ppm Bi) forms dispersion haloes as a function of ph changes above and below the water table generally at or near the bottom of the holes. This is reflected in horizontal layering of iron hydroxides/oxides and distinctive hematite-goethite; goethite-limonite; and goethite alternation zones. The drill holes intersected a sequence of sheared Proterozoic pasammitic and tuffaceous sediments with sheared intrusive Warrego Granite and pegmatite dykes and sills. Rare Proterozoic dolerite dykes/sills were intersected. The Proterozoic lithologies are overlain by a 20m thick Cainozoic cover consisting of 5m of Quaternary colluvium and 15m of Tertiary clay, silcrete, laterite, saprolite.*

*The drill testing of anomalies T1-5,7 defined anomalous geochemistry form all anomalies. The T7 anomaly, however, was the only area intersecting significant magnetite-chlorite alternation from 52-54m in hole WWR22 on section 3300E at 8000N at the contact of sheared sediments and granite. Anomalous Cu (20ppm) and Zn (110ppm) mineralisation is recorded from the intersection demonstrating a related Cu-Zn halo on the section.*

*The style of economic mineralisation at Tennant creek occurs principally in a coned settings associated with magnetite in fresh psammitic sediments (Waramunga Group) below 100m vertical. Consequently the likely dispersion detected in the weathered zone at depths ≤50m will be far greater than concentrations deemed critical for defining economic concentration of elements. The results of the RAB drilling and interpretations support the need for deep RC drilling of targets T1-5,7 in conjunction with shallow RAB drilling of further targets T6, 9, 10, 12-16".*

The RAB drilling results over EL8247, particularly over the T7 Anomaly support the need to acquire higher resolution of the remote sensing data to accurately position drill collars. This would involve mulispectral image data and low level close spaced aeromagnetic data and electromagnetic surveys in conjunction with a gravity survey. The higher resolution of remote sensing data is directly applicable to exploring EL9261 as there is no outcrop over the licence and previous interpretations suggest zones of Warrego Granite and magnetic anomalies presumably in rafts of Waramunga Formation.

## 2.2 10TH NOVEMBER 1996 – 14TH MAY 1997

Following a review of the Kelly Project, Nexus made enquiries into acquiring geophysical data from public and private domain sources. Planning was undertaken for a small RAB drilling programme. Unfortunately these activities were terminated with the canceling of the licence.

## 3. REFERENCES


| | | |
|---|---|---|
| RAFTY D.J.<br>HEMMING G.R. | 1996 | Annual Report EL8246<br>23rd November 1994 – 22nd November 1995<br>Warrego West Project for Nexus Minerals N.L.<br>(operator) and North Star Resources N.L. (licensee).<br>: Unpublished. |

N

WARREGO

Warrego - Tennant Creek Road

7 850 000mN

19° 30'

7840 000mN

T12 M

T11 H

T10 M

T9 M

T8 M

T13 H

T14 H

T1 H

T2 M

T3 H

T4 H

T5 H

T15 H

T16 H

T17 M

T7 M

M T6

300

250

E 9006

EL9261

EL 8247

Clays on granites

Anomalous Cu in siltstones

Siltstones

Siltstones

'NAVIGATOR'

CRUSADER

WHITE DEVIL

BLACK ANGEL

PREMIER

RED BLUFF

BOUNDARY OF ABORIGINAL FREEHOLD

RELINQUISHED 23-11-95

LEGEND

T14 Target number

Regional Aeromagnetic Targets defined.

Regional Aeromagnetic Targets less defined.

Detailed Aeromagnetic Targets.

Structures.

H High priority.

M Medium priority.

Mining Leases.

SCALE 1:100 000

0 1 2 3 4 5 6km

NEXUS MINERALS NL

TENNANT CREEK REGION

# WARREGO WEST AEROMAGNETIC TARGETS AND LOCATION

FIGURE 1 January 1996