PARTIAL RELINQUISHMENT REPORT

MURLANBA (EL 28056)

17/12/2010 to 16/12/2012

Title Holder: NATURAL RESOURCES EXPLORATION PTY. LTD.
Operator: Natural Resources Exploration Pty. Ltd.
Tenement Manager: Nicole Munro, Natural Resources Exploration Pty. Ltd.
Titles / Tenements: EL(s): 28056
Project Names: Murlanba
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Author(s): Munro, N and Forder, P.
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Target Commodity / Commodities: Base Metals and Diamonds
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Summary

Section 94 of the Mineral Titles Act requires the submission of a Relinquishment Report prepared by the titleholder for each current Exploration Licence. This Partial Relinquishment Report for EL28056 offers a summary of the activities undertaken on the relinquished area for the life of the permit, including any results produced by those activities.

Natural Resources Exploration (‘NRE’) is the sole titleholder and operator of EL28056. NRE was granted EL28056 on 17 December 2010 for a term of six (6) years. NRE was subsequently granted the approval from the Department of Resources to incorporate this tenure into Group Technical Reporting for the project area known by NRE as its ‘South Nicholson Project’.

The work and expenditure program for EL28056 consisted of a detailed geological review of existing data and information towards determining the location of possible diamond mineralisation within the tenement as well as any possible base metal potential. NRE has carried out a detailed geological assessment of the tenures within its South Nicholson Project. NRE’s exploration activities during the first term included considerable research. Research included review and compilation of the data in the Northern Territory Geological Services’ (‘NTGS’) open file reports, air photo imagery, geochemical samples, geophysical survey data, drilling results and examination of the latest geological maps.

During NRE’s helicopter reconnaissance program over the South Nicholson Project, NRE targeted areas for ground evaluation on the basis of previous geophysical surveys, in particular aeromagnetics and radiometrics. Sites were tested using a scintillometer and by the taking of soil and rock samples. Geological observations and photographs were recorded at each site. Although no samples (soil or rock) were collected from within the EL28056 prospect, data collected on a regional scale was used to further understand the surrounding geology for future interpretations.

On complete review of all desktop and field work conducted over the tenure, an area has now been nominated for relinquishment within EL28056 with the remainder of the tenure requiring follow-up work.
1. Introduction

EL28056 was granted to Natural Resources Exploration (‘NRE’) on 17 December 2010, consisting of a total of 6 sub-blocks. The tenure is located within the Palaeoproterozoic Murphy Province to the north of the South Nicholson Basin. The tenement in question (EL28056) is more commonly known to NRE as its ‘Murlanba Prospect’. NRE has considered the evaluation of potential diamond and base metal mineralisation within this tenement.

NRE also considered the potential for these forms of mineralisation across the broader area of NRE’s South Nicholson Project which EL28056 forms part of.

After complete review of all desktop and field work conducted over the tenure, Figure 1 identifies the location of the relinquished area subject of this report.

Figure 1. Location Map of Relinquished Area

NRE has conducted an extensive review of all previous exploration across the whole of EL28056. This review included open file reports, aerial photography, geochemical samples, geophysical survey data, drilling results, geological map examination and ASTER data analysis.

Currently, office-based exploration activities continue on the remainder of the tenure with preliminary results confirming the need for further investigation.
2. History

EL28056 was granted to NRE for six (6) years commencing on 17 December 2010, as the sole titleholder and operator. NRE has recently nominated to relinquish 2 sub-blocks with the remainder of the permit comprising of 4 sub-block. Figure 2 below identifies both the retained permit area and the relinquished permit area.

Figure 2. Relinquished Area & Permit Area Map

The relinquished sub-blocks subject to this report are as listed in Table 1 below.

Table 1. Relinquishment Area Sub-block Identification.

<table>
<thead>
<tr>
<th>Block Identification</th>
<th>Sub-block(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1645</td>
<td>W, X</td>
</tr>
</tbody>
</table>

Figure 3 below illustrates the blocks and sub-blocks which have been nominated for relinquishment.
Both the relinquished areas and retained permit area are located over surface lands that are comprised primarily of Perpetual Pastoral Leases (Figure 4).
Figure 4.  Cadastral Map of Relinquished Area
3. Geology

3.1 Regional Geology

EL28056 is located entirely within the Murphy Province which is made up of the Palaeoproterozoic Murphy Metamorphics and the co-magmatic Cliffdale Volcanics and Nicholson Granite Complex. The Murphy Province is an east trending basement and straddles the border between Queensland and Northern Territory some 300 km north-west of Mount Isa (Denaro and Dhnaram 2009).

The Murphy Metamorphics consist of shale, siltstone, sandstone and felsic volcanic rocks converted to schist and gneiss by greenschist facies metamorphism. These rocks are isoclinally folded along east-west axes and are unconformably overlain by the Cliffdale Volcanics and the Nicholson Granite Complex. The upper age limit of the Cliffdale Volcanics is constrained by the older phases of the Nicholson Granite Complex at 1820±103Ma as this was a co-magmatic event. The lower part of the Cliffdale Volcanics is dominated by ignimbrite whilst the upper part consists essentially of flow-banded alkali rhyolite and minor tuff dated at 1730±20Ma. The Nicholson Granite Complex intrudes both the Murphy Metamorphics and the Cliffdale Volcanics in some parts and consists of granodiorite and granite (Denaro and Dhnaram 2009).

The Murphy Inlier contains over 50 uranium, copper, tin and base metal occurrences (Mernagh and Wygralak 2011).

To the south of the Murphy Inlier lies the Mesoproterozoic South Nicholson Basin. The South Nicholson Basin consists of the Benmara Group and the South Nicholson Group. The Benmara group contains: ferruginous to silicified, immature to mature, sublithic to lithic sandstone, trachyte, pebble conglomerate, ferruginous siltstone and minor stromatolitic chert. The South Nicholson Group contains: siltstone, shale and sandstone of a Mesoproterozoic age (Geoscience Australia 2012).

The only significant mineralisation recorded within the rocks of the basin is sedimentary ironstone in the Constance Range area (Harms, 1965) where oolitic hematite, siderite and chamosite beds occur within the Train Range Ironstone Member.

The regional geology is shown in Figure 5 below. A general stratigraphic column illustrating the rock relationships across part of the Mt Drummond 1:250,000 geological map is shown in Figure 6.
Figure 5. *Regional Geology Map of Relinquished Area*

Figure 6. *Simplified stratigraphic column of the Murphy Inlier*

<table>
<thead>
<tr>
<th>Era</th>
<th>Eon / Period</th>
<th>Formation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cenozoic</td>
<td>Quaternary</td>
<td>Soil, sand and ferruginous cemented detritus.</td>
</tr>
<tr>
<td>Precambrian</td>
<td>Paleoproterozoic</td>
<td>Cliffdale Volcanics (1732-1850 Ma)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nicholson Granite Complex (1804-1856 Ma)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Murphy Metamorphics (1900 Ma)</td>
</tr>
</tbody>
</table>
3.2 Permit Geology

Outcrops in EL28056 are very hard to find as the tenure is predominantly covered by unconsolidated sediments.

Surficial Deposits
EL28056 is characterized by extensive cover of Cenozoic soil, sand and ferruginous cemented detritus.

Nicholson Granite Complex
To the north-east, the centre and western side of the tenement the Nicholson Granite Complex can be seen in outcrop. The rocks consist of biotite and muscovite granite and adamellite, medium to fine grained and equigranular.

The geology has been mapped and interpreted across the Calvert Hills 1:250,000 geological sheet by government geologists who worked the area in two (2) phases, 1972 and 2008. The permit geology is illustrated in Figure 7 below.

Figure 7.  Permit Geology Map of the Relinquished Area
4. **Exploration Objectives and Rationale**

The objective of NRE’s exploration program on EL28056 and adjoining tenures was to consider and evaluate the potential for diamond and base metal mineralisation. Investigations were primarily aimed towards locating any outcropping of mineralisation and any indicators of possible subsurface mineralisation across the area.

5. **Exploration Activities carried out on the Relinquished Area**

NRE’s exploration activities during the term of the permit and in particular, of the relinquished area, consisted of both office-based and field activities. An initial regional assessment of the areas within EL28056 and NRE’s South Nicholson Project for diamond and base metals was conducted during the initial term.

Desktop research of regional geological and geophysical data, augmented with compilation and assessment of all previous exploration results was conducted. Material from historic exploration was extensively reviewed over the relinquished area. There has been a number of previous exploration tenements over the subject relinquished area ([Figure 8](#) below). A list of the previous exploration reports in relation to the relinquished area is shown in Table 2 below.

**Figure 8. Historical Tenements over the Relinquished Area**
### Table 2. Historical Reports

<table>
<thead>
<tr>
<th>TENURE</th>
<th>PERIOD</th>
<th>COMPANY REPORTS</th>
<th>COMPANY</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP444</td>
<td></td>
<td>CR1956-0004</td>
<td></td>
</tr>
</tbody>
</table>

### 5.1 Water Bore Cuttings Analysis

In January 2011, the Department kindly allowed NRE to set-up in the Darwin Core Facility where NRE’s geologists undertook analysis of the water bore cuttings using a hand-held XRF device and re-logged water bores. Although none of the analysed water bores fell within the relinquished area of EL28056 the data gathered from these water bores assisted with future geological interpretation and target generation.

NRE lodged an Exploration Report with the Northern Territory Department of Resources’ Geoscience Division on 7 June, 2011. This report was required in respect of the XRF and ALS Assaying of Water Bore Chips at the Darwin Core Facility. The Exploration Report was titled ‘XRF & ALS Assaying of Water Bore Chips – Core Facility: Darwin’.

During NRE’s helicopter reconnaissance program over the South Nicholson Project, NRE targeted areas for ground evaluation on the basis of previous geophysical surveys, in particular aeromagnetics and radiometrics. Sites were tested using a scintillometer and by...
the taking of soil and rock samples. Geological observations and photographs were recorded at each site. Although no samples (soil or rock) were collected from within the EL28056 area, data collected on a regional scale was used to further understand the surrounding geology for future interpretations.

6. Reports lodged during the Reporting Period

NRE lodged an Exploration Report with the Northern Territory Department of Resources’ Geoscience Division on 7 June, 2011. This report was required in respect of the XRF and ALS Assaying of Water Bore Chips at the Darwin Core Facility. The Exploration Report was titled ‘XRF & ALS Assaying of Water Bore Chips – Core Facility: Darwin’.

NRE lodged its Year 1 Group Annual Technical Report with the Northern Territory Department of Resources on 26 August 2011, the report of which covered a number of tenures forming NRE’s ‘South Nicholson Project GR175/10’.

NRE also lodged its Year 2 Group Annual Technical Report with the Northern Territory Department of Mines and Energy on 25 September 2012, the report of which covered a number of tenures forming NRE’s ‘South Nicholson Project GR175/10’.
7. Conclusions

Natural Resources Exploration’s exploration activities during the first and second term of EL28056 have been focused on delineating surface targets within the relinquished area with the aim of identifying any diamond or base metal mineralisation.

NRE has conducted both office-based studies and field operations on EL28056 during the term of this tenure. NRE carried out a detailed geological assessment of the relinquished area which included considerable research prior to a helicopter reconnaissance program evaluating the area. Research included review and compilation of the data in the Northern Territory Geological Services’ (NTGS) open file reports, air photo imagery and examination of the latest geological maps.

After its extensive review of all previous exploration data and its newly acquired data in relation to this ground, NRE has concluded that the potential for mineralisation within the nominated relinquished area is much lower than the remaining tenement area with the remainder of the tenure requiring follow-up work.
8. Bibliography


Note these (and many more) references are also located in the References section of the Cavert Hill 1:250,000 geological map series explanatory notes.