PARTIAL RELINQUISHMENT REPORT

SHENANDOAH
(EL 27879)

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Contents
Summary .................................................................................................................. 3
1. Introduction ........................................................................................................ 4
2. History ............................................................................................................... 5
3. Geology ............................................................................................................ 8
   3.1 Regional Geology ......................................................................................... 8
   3.2 Permit Geology ............................................................................................ 10
4. Exploration Objectives and Rationale ............................................................. 11
5. Exploration Activities carried out on the Relinquished Area ....................... 11
6. Reports lodged during the reporting period .................................................... 14
7. Conclusions ..................................................................................................... 15
8. Bibliography .................................................................................................... 16

Figures
Figure 1. Location Map of Relinquished Area .................................................. 4
Figure 2. Topographic Map of Relinquished Area ............................................ 5
Figure 3. Relinquished Area & Permit Area Map ............................................ 6
Figure 4. Sub-block Map of Relinquished Area ................................................. 7
Figure 5. Cadastral Map of Relinquished Area ............................................... 8
Figure 6. Regional Geology Map of Relinquished Area .................................. 9
Figure 7. Permit Geology of the Relinquished Area ....................................... 11
Figure 8. Historical Tenements over the Relinquished Area ....................... 13
Figure 9. Water Bore Location Map ................................................................. 14

Tables
Table 1. Relinquishment Area Sub-block Identification .................................. 6
Table 2. Historical Reports ................................................................................. 13
Table 3. Water Bore Tested Using Hand Held XRF Device ............................ 14
Summary

Section 94 of the *Mineral Titles Act* requires the submission of a Partial Relinquishment Report prepared by the titleholder for each current Exploration Licence. This Partial Relinquishment Report for EL27879 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 EL27879. NRE was granted EL27879 on 3 August 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 ‘Daly Waters Project’.

The work and expenditure program for EL27879 consisted of a geological and geophysical review of existing data and information towards determining the location of possible phosphate and base metal mineralisation. The Project was also considered for other targets such as uranium and diamonds during the early phases of exploration.

NRE attended the Darwin Core Library for the purposes of analysing water bore cuttings available within close proximity to the retained area of EL27879. These water bores were tested by NRE using a portable XRF and where NRE felt appropriate, also sent some samples to ALS Laboratories for confirmation of initial analysis by portable XRF.

NRE has carried out a detailed desktop evaluation but also a detailed geological assessment of EL27879. In relation to the relinquished area, NRE has concluded that the potential for mineralisation within this area is much lower than the remaining tenement area. NRE has delineated this area and nominated same after its extensive review of all previous exploration data and its newly acquired data in relation to this ground.
1. Introduction

Natural Resources Exploration’s (‘NRE’) rationale and objectives for EL27879, more commonly known by NRE as its ‘Shenandoah’ Prospect, considered the evaluation of phosphate and base metal mineralisation. NRE also considered the potential for these forms of mineralisation across a broader area being known as NRE’s ‘Daly Waters Project’. This tenure forms part of a number of tenures which make up NRE’s ‘Daly Waters Project’.

Shenandoah and the surrounding tenures within the Daly Waters Project were also considered for other targets such as uranium and diamonds during the early phases of exploration.

EL27879 was granted to NRE on 3 August 2010, consisting of a total of 475 sub-blocks. EL27879 is located in the central north of the Northern Territory, approximately 500 kilometres southeast of Darwin. The township of Daly Waters is situated within an incised portion of the project area. **Figure 1** identifies the location of the relinquished area subject of this report.

**Figure 1. Location Map of Relinquished Area**
The topography within EL27879 is predominantly gently undulating, with elevation ranging between 200 and 250 meters above sea level. Birdum, Daly Waters and Two Mile Creeks pass through the centre of EL 27879 draining to the north. Figure 2 shows the topography within the relinquished area.

Figure 2. Topographic Map of Relinquished Area

NRE’s exploration activities for EL27879 has included a detailed desktop evaluation and also a detailed geological assessment of EL27879. Analysis of water bore cuttings on a regional scale was also carried out.

Currently, office-based exploration activities continue with results confirming the need for follow up work in relation to the remainder of the tenure and overall Daly Waters Project.

2. History

EL27879 was granted to NRE for six (6) years commencing on 3 August 2010, as the sole titleholder and operator. NRE has recently nominated to relinquish 120 sub-blocks with the remainder of the permit comprising 355 sub-blocks. Figure 3 below identifies both the retained permit area and the relinquished permit area.
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>377</td>
<td>E,K,P,U,Z</td>
</tr>
<tr>
<td>449</td>
<td>E,K</td>
</tr>
</tbody>
</table>

Figure 4 below illustrates the blocks and sub-blocks which have been nominated for relinquishment.
Native Title

There are currently no Native Title Claims over the relinquished area.

Pastoral Leases

Both the relinquished areas and retained permit area are located over surface lands that are comprised primarily of Perpetual Pastoral Leases *(Figure 5).*
3. Geology

3.1 Regional Geology

EL27879 and the surrounding Daly Waters Project tenements are located in the central region of the Mesozoic Dunmarra Basin, an unmetamorphosed intracratonic basin unconformably part of the Neoproterozoic-Palaeozoic overlying the Georgina, Wiso and Daly Basins and Palaeoproterozoic-Mesoproterozoic sedimentary rocks of the McArthur Basin. The Dunmarra Basin is largely unmetamorphosed and attains a maximum thickness of ~100 meters. No mineral occurrences are known but potential is thought to exist for diamondiferous kimberlite pipes, phosphates, base metals and uranium. The regional geology is shown in Figure 6.
The unmetamorphosed Georgina Basin is an intracratonic Neoproterozoic to Devonian sedimentary basin forming part of the Central Australian Platform Cover. The Basin is an erosional remnant of a series of originally interconnected central Australian intracratonic basins (the Centralian Super-Basin) that range from Neoproterozoic to Palaeozoic. The Basin contains up to 3.7 kilometres of sedimentary rocks with frequent oil shows throughout. Although mainly explored for phosphate, oil and gas, several small lead-zinc occurrences are located along the southern margin. The large Wonarah phosphate deposit and a number of smaller deposits and prospects exist within the Basin. Base metal potential in the southern part of the basin has been highlighted by recent NTGS studies whilst a large part of the basin is currently under exploration for diamonds.

Like the Georgina Basin, the Wiso Basin (Cambrian to Devonian) is an unmetamorphosed intracratonic sedimentary basin that also forms part of the Central Australian Platform Cover. It unconformably overlies the Aileron Province metamorphic rocks to the south, Tanami Region and Victoria-Birrindudu Basin to the west, and Tennant Creek Region to the east. Cretaceous rocks of the Dunmarra Basin cover its northern margin. Sediments in the Wiso Basin are up to three (3) kilometres thick and although rare oil shows are noted in stratigraphic drillholes, no petroleum wells have been drilled. The Basin is considered prospective for petroleum and phosphate and is currently being explored for diamonds.
Similarly, the Daly Basin (Cambrian to Ordovician), is an unmetamorphosed sedimentary basin forming part of the Central Australian Platform Cover. Up to 1 kilometre thick, it unconformably overlies the Pine Creek Orogen metamorphic rocks and MacArthur Basin to the north and east and the Victoria Basin to the west. Cretaceous rocks of the Dunmarra Basin cover its southern margin. Little exploration has been conducted in the basin but it is a source of limestone suitable for quicklime and cement and potential exists for Mississippi Valley-Type (MVT) Pb-Zn occurrences. Some potential also exists for phosphate deposits. Unmetamorphosed sedimentary rocks of the Mesoproterozoic-Palaeoproterozoic McArthur Basin forms part of the North Australian Platform Cover and unconformably overlie the Palaeoproterozoic Pine Creek Orogen to the northwest, the Murphy Inlier to the southeast and Arnhem Inlier to the northeast. Hosting the McArthur River Zn-Pb-Ag mine, several minor occurrences of base metals and uranium are known and the basin is considered to have significant exploration potential for sediment hosted base metal deposits.

### 3.2 Permit Geology

The permit / local geology within the area subject of relinquishment is dominated by Cainozoic and Tertiary sedimentary units comprising alluvium and black soil (Cza), haematitic clayey soils, residual sands and ferruginous rubble (Czs), laterite, nodular and pisolitic ironstone and ferruginous rubble (TI). These ferruginous and lateritic weathering profiles have developed over poorly exposed Crataceous marine sediments of the Mullaman Beds (Klm) (claystone, siltstone, glauconitic sandstone and ferruginous conglomerate) in response to prolonged weathering during the Tertiary.

The Cretaceous Mullaman Beds represent the oldest outcropping geology in the region. However, unconformably underlying this stratigraphy are Middle Cambrian Limestones and Lower Cambrian basic volcanics, primarily comprised of basalt. The permit geology is illustrated in **Figure 7** below.
4. Exploration Objectives and Rationale

NRE’s exploration rationale and objectives for its Daly Waters Project considered the evaluation of phosphate and base metal mineralisation. The Project was also considered for other targets such as uranium and diamonds during the early phases of exploration. Investigations during the term of the licence have been to locate any outcropping of mineralisation and any indicators of any subsurface mineralisation across the tenements.

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 NRE’s Daly Waters Project for phosphate and base metals was conducted during the initial term.

Targets within the Daly Waters Project areas have been identified based on desk top research of regional geological and geophysical data, augmented with compilation and assessment of all previous exploration results.

The aim of the work was to identify areas of possible further exploration work and in particular, areas and models for mineralisation across the four (4) tenements forming the...
Daly Waters Project. An array of material was assessed during the first term to assist with optimal target generation and included:

- Data from all previous exploration as documented in open file reports retrieved from the Northern Territory Government, including:
  - Surface geological sampling,
  - Geochemical anomalism mapping,
  - Geological mapping,
  - Detailed geophysical survey data,
  - Geophysical anomalism mapping,
  - Drilling results, and
  - Local and regional geological assessments and conclusions derived from exploration programs.

- Water bore data available for all bores drilled in the regions of interest. This data includes geological logging and water assaying.

- Geological maps provided by the Northern Territory Government.

- Aeromagnetics, aero-radiometrics and gravity surveys provided by the Northern Territory Government.

- Satellite imagery, ASTER and Google Earth imagery.

- Data supplied by landowners in relation to geological and topographic features of interest on their properties.

EL27879 was evaluated using desktop research of regional geological and geophysical data, augmented with compilation and assessment of all previous exploration results. This material included an extensive review of historic exploration conducted over the relinquished area. There has been a number of previous exploration tenements over the subject relinquished area (Figure 8 below).
EL27879 has been explored for diamonds by various companies. They were unsuccessful in locating kimberlite pipes. A list of the previous exploration reports in relation to the relinquished area is shown in Table 2 below.

Table 2. Historical Reports

<table>
<thead>
<tr>
<th>Tenement</th>
<th>Period</th>
<th>Company Reports</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL 23009</td>
<td>2003-2004</td>
<td>CR2004-0072</td>
<td>De Beers Australia Exploration</td>
</tr>
<tr>
<td>EL 23019</td>
<td>2003-2004</td>
<td>CR2004-0045</td>
<td>De Beers Australia Exploration</td>
</tr>
</tbody>
</table>

NRE also engaged Terra Search Pty. Ltd. to attend the Northern Territory’s Darwin Core Facility to analyse a number of cuttings available from historically drilled water bores within its project areas.

The Department kindly allowed NRE to set-up in the Darwin Core Facility where NRE’s geologists undertook analysis of one (1) water bore cutting located within EL27879. Figure 9 shows the location of the water bore within EL27879. Table 3 outlines the water bore tested.
Full assay results are available within NRE’s Exploration Report lodged 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’.

**Figure 9. Water Bore Location Map**

![Water Bore Location Map](image)

**Table 3. Water Bore Tested Using Hand Held XRF Device**

<table>
<thead>
<tr>
<th>Hole ID</th>
<th>MGA_52_Easting</th>
<th>MGA_52_Northing</th>
</tr>
</thead>
<tbody>
<tr>
<td>RN034704</td>
<td>333626</td>
<td>8169011</td>
</tr>
</tbody>
</table>

**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 Alice Springs Core Facility. The Exploration Report was titled ‘XRF & ALS Assaying of Water Bore Chips – Core Facility: Darwin’.
7. Conclusions

Natural Resources Exploration’s exploration activities during the term of the permit and in particular, of the relinquished area, have been focused on delineating surface targets within EL27879 with the aim of identifying any base metal mineralisation in the region.

The work and expenditure program for EL27879 consisted of a geological and geophysical review of existing data and information towards determining the location of possible phosphate and base metal mineralisation. NRE attended the Darwin Core Library for the purposes of analysing water bore cuttings available within close proximity to the retained area of EL27879. These water bores were tested by NRE using a portable XRF and where NRE felt appropriate, also sent some samples to ALS Laboratories for confirmation of initial analysis by portable XRF.

In relation to the relinquished area, NRE has been unable to identify any subsurface mineralisation in respect of base metals and phosphate. NRE has concluded that the potential for mineralisation within this area is much lower than the remaining tenement area. NRE has delineated this area and nominated same after its extensive review of all previous exploration data and its newly acquired data in relation to this ground.
8. Bibliography


