HIGHLAND ROCKS PROJECT
EL 27511
Annual and Final Technical Report

For the Period 18/11/2015 to 16/11/2018

Tenure Holder: Ramelius Resources Ltd (85%)
Tychean Resources Limited (15%)

Submitted by: Ramelius Resources Limited
Author: Erik van Noort
Contact: erikvannoort@rameliusresources.com.au
Date: 13/12/2018
Mapsheets: 1:250,000 SF/52-7 Highland Rocks
SF/52-3 The Granites

Target Commodity: Gold

Distribution: NT Department of Mines and Energy
Tychean Resources Ltd
Ramelius Resources Ltd
ACKNOWLEDGEMENT AND WARRANTY

1. Subject to 2, the tenure holder acknowledges that this Report, including the material, information and data incorporated in it, has been made under the direction or control of the State of Queensland (the State) within the meaning of section 176 of the Copyright Act 1968 (Cwth).

2. To the extent that copyright in any material included in this Report is not owned by the State, the tenure holder warrants that it has the full legal right and authority to grant, and does hereby grant, to the State, subject to any confidentiality obligation undertaken by the State, the right to do (including to authorise any other person to do) any act in the copyright, including to:
   • use;
   • reproduce;
   • publish; and
   • communicate in electronic form to the public, such material, including any data and information included in the material.

3. Without limiting the scope of 1 and 2 above, the tenure holder warrants that all relevant authorisations and consents have been obtained for all acts referred to in 1 and 2 above, to ensure that the doing of any of the acts is not unauthorised within the meaning of section 29(6) of the Copyright Act (Cwth).
Contents

1. INTRODUCTION ........................................................................................................................................... 4
  1.2 Tenure and Land Status ......................................................................................................................... 4

2. GEOLOGICAL SETTING ................................................................................................................................. 5
  2.1 Regional Geology and Mineralisation ..................................................................................................... 5

3. Exploration Rationale .................................................................................................................................... 6

4. PREVIOUS EXPLORATION .......................................................................................................................... 7
  4.1 1997 to 2000 Havilah Resources NL / Desertex NL Joint Venture ..................................................... 7
  4.2 2000 to 2004 Normandy Exploration / Newmont Tanami Pty Ltd ..................................................... 7

5. SUMMARY OF EXPLORATION ACTIVITIES 2015 - 2018 ............................................................................. 7
  5.1 Exploration 2015-2016 (Ramelius Resources Ltd) ............................................................................. 8
  5.1.1 Reconnaissance Mapping ................................................................................................................... 8
  5.1.2 Soil & LAG Sampling ....................................................................................................................... 9
  5.1.3 Vacuum Drilling ................................................................................................................................ 10
  5.2 Exploration 2016-2017 (Ramelius Resources Ltd) ............................................................................. 12
  5.2.1 Target Generation ............................................................................................................................ 12
  5.2.2 Reconnaissance Mapping ................................................................................................................ 14
  5.2.3 Soil and Rock-chip Samping ........................................................................................................... 14

6. EXPLORATION COMPLETED IN FINAL PERIOD OF TENURE (2017-2018) ........................................... 14

7. REFERENCES ................................................................................................................................................. 15

List of Figures

Figure 1: Locality plan showing tenement EL27511 ..................................................................................... 5
Figure 2: EL27511 Regional Geology ........................................................................................................... 6
Figure 3: EL27511 Exploration Index Map for 2015-2016 reporting period ............................................... 8
Figure 4: EL27511 Regolith Mapping (2015-2016 reporting period) ........................................................... 9
Figure 5: EL27511 Soil and LAG Sampling Sites (2015-2016) .................................................................... 10
Figure 6: EL27511 Vacuum Drill Hole Collars (2015-2016) .................................................................... 11
Figure 7: EL27511 Exploration Index Map for 2016-2017 reporting period .............................................. 12
Figure 8: EL27511 Exploration Targets on aeromagnetic image (2016-2017) ........................................ 13

List of Tables

Table 1: Tenement details for EL27511 ............................................................................................................ 4
Table 2: Summary Drilling Table ................................................................................................................ 7
Table 3: Surface Geochemistry Sampling Details for EL27511 ................................................................. 9
Table 4: Vacuum drill collar locations (2015-2016) ................................................................................ 11
Table 5: Targets identified in EL27511 (2016-2017) .............................................................................. 13
Table 6: Surface Geochemistry Sampling Details for EL27511 ............................................................... 14
Abstract

This final and annual report summarises exploration activities on EL27511, located c. 530km north-west of Alice Springs, Northern Territory, for the period of tenure, covering the period 18th November 2015 to 16th November 2018.

Exploration License EL27511 was granted to Tychean Resources Ltd (Tychean; formerly ERO Mining Ltd) on 18th November 2015 for a period of 6 years. During 2014 Ramelius Resources Ltd entered into a Farm-in Agreement with Tychean Resources Limited, comprising the Tanami Joint Venture, which includes EL27511. Ramelius are operators of the project and have earned an 85% Joint Venture Interest in the tenement package.

The target commodity of EL27511 is gold. The tenement contains several prospective targets in Tanami Group basement rocks.

Work carried out on the license during the period of tenure included:

- Target generation
- Reconnaissance geological mapping
- Surface geochemical sampling and vacuum drilling over selected target areas. No significant gold anomalism was identified by the sampling.

No exploration was completed during the final period of tenure (18/11/2017 to 17/11/2018). The tenement was surrendered on 16th November, 2018.
1. INTRODUCTION

EL27511 was held by Ramelius Resources (85%) Tychean Resources Ltd (15%) under a Farm-in / Joint Venture Agreement established in May, 2014. The tenement was surrendered on 16th November, 2018. This report summarises all exploration activities carried out for the period of tenure, covering the period 18th November 2015 to 16th November, 2018.

1.1 Location and Access
Exploration License EL27511 is located approximately 535km north-west of Alice Springs, Northern Territory. The license covers 151 sub-blocks for a total area of 484 square kilometres. Vehicle access from Alice Springs is by way of the Tanami Road to approximately 180km northwest of Yuendumu, thence westwards approximately 110km along the Escondida Track to the tenement. Figure 1 shows the location of EL27511.

1.2 Tenure and Land Status
Exploration License EL27511 (151 sub-blocks) was granted to Tychean Resources Ltd (Tychean; formerly ERO Mining Ltd) on 18th November 2015 for a period of 6 years. On 26 May, 2014, Ramelius entered into a Farm-in and Joint Venture Agreement with Tychean over its Tanami tenements. Under the terms of the agreement, Ramelius earned an 85% interest in the Tanami Joint Venture, having spent over $500,000 in exploration. Details on the farm-in and joint venture were released to the ASX on 27 May 2014.

As part of the application process, the company entered into negotiations with the Central Land Council (CLC) in respect of EL27511, being land vested in the Lake Mackay Aboriginal Land Trust (NTP1642) and Yiningarra Aboriginal Land Trust (NTP1792). In accordance with the provisions of the Aboriginal Land Rights (Northern Territory) Act, the company initially provided an Exploration and Mining Proposal to the CLC in May, 2013. A Deed for Exploration was finalised with the CLC on 8th September, 2015. Owing to changes in the company’s exploration strategy, updated Exploration and Mining Proposals were provided to the CLC in February and April of 2017.

The license originally comprised 151 sub-blocks. At the end of the second year of tenure, in accordance with Section 29 of the Minerals Title Act, a compulsory reduction of 50% of the tenure was undertaken, with 75 sub-blocks retained (Figure 1).

Table 1: Tenement details for EL27511

<table>
<thead>
<tr>
<th>Tenement</th>
<th>Holder</th>
<th>Operator</th>
<th>Grant Date</th>
<th>Surrender Date</th>
<th>Sub-Blocks</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL27511</td>
<td>Ramelius Resources Ltd (85%) Tychean Resources Ltd (15%)</td>
<td>Ramelius Resources Ltd</td>
<td>18/11/2015</td>
<td>16/11/2018</td>
<td>75</td>
</tr>
</tbody>
</table>
2. GEOLOGICAL SETTING

2.1 Regional Geology and Mineralisation

The Palaeoproterozoic Tanami Region forms part of the North Australian Craton and comprises a succession of fine grained siliclastic sedimentary rocks, turbidite, BIF, mafic sills, basalt and minor Volcaniclastics. The region was subject to multi-phase deformation, regionally metamorphosed to greenschist to mid-amphibolite facies and subsequently intruded by 1825-1790Ma granites (Wygralak et al., 2005).

EL27511 contains rocks of the Tanami Group and Lander Rock Formation of the Aileron Province. A regional structural corridor between the Tanami and Arunta Provinces forms the contact between the Tanami Group and Lander Rock Formation. Rocks of the Tanami Group include the moderately magnetic Dead Bullock Formation, comprising siltstone, metapelite and chert which is conformably overlain by the Killi Killi Formation, comprising turbiditic sandstones. Tertiary colluvial sheetwash and Aeolian sands overlie much of the area.
Gold mineralisation in the Tanami Region is dominated by orogenic lode gold deposits, predominantly within mafic volcanic and sedimentary lithologies of the Dead Bullock Formation (e.g. DBS and Granites Goldfields) and Killi Killi Formation (e.g. Groundrush).

3. Exploration Rationale

EL27511 contains rocks of the Tanami Group and the Lander Rock Formation, the contact of which is defined by a regional structural corridor. Rocks of the Tanami Group host several large gold deposits in the region (e.g. Callie). Historical work within the licence area identified a number of targets in areas of no to very little transported regolith cover within the Tanami Group rocks. These targets, including mapped quartz veins and shear zones, surface geochemical and shallow drilling anomalism have had limited testing.

Historic exploration focussed in areas of outcrop or shallow transported cover. Areas with significant transported cover remain untested across the licence. Reconnaissance drilling of targets in areas of deeper transported cover was required to further assess the potential for economic gold mineralisation within EL27511.
4. PREVIOUS EXPLORATION

4.1 1997 to 2000 Havilah Resources NL / Desertex NL Joint Venture

From 1997 to 2000, the eastern part of the licence was explored for gold under a joint venture between Havilah Resources NL and Desertex NL. Work included ground reconnaissance, surface geochemical sampling, reconnaissance RAB drilling and follow-up systematic RAB drilling of various structural and/or magnetic targets. Exploration returned generally low-level Au anomalies as well as low-level As and Cu anomalies.

4.2 2000 to 2004 Normandy Exploration / Newmont Tanami Pty Ltd

From 2000 to 2004, the eastern part of the licence was explored for gold by Normandy Exploration (subsequently Newmont Tanami Pty Ltd). Normandy carried out extensive regional surface sampling, vacuum drilling, and follow-up RAB drilling at a number of prospects. Air-core drilling was also carried out in areas of deeper transported cover to test specific basement magnetic features.

5. SUMMARY OF EXPLORATION ACTIVITIES 2015 - 2018

5.1 Exploration 2015-2016 (Ramelius Resources Ltd)

Exploration completed during the 2015-2016 reporting period comprised:

- Reconnaissance mapping & rock chip sampling
- Soil and LAG sampling
- Vacuum Drilling

The surface sampling sites and drill collar locations are shown in Figure 3.

Table 2: Summary Drilling Table

<table>
<thead>
<tr>
<th>Hole Type</th>
<th>Hole Number range</th>
<th>No. Holes</th>
<th>Total metres</th>
<th>Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vacuum</td>
<td>HRV0001 – HRV0009, HRV0018 – HRV0025, HRV0040 – HRV0042, HRV0056 – HRV0061</td>
<td>26</td>
<td>208</td>
<td>30</td>
</tr>
</tbody>
</table>
5.1.1 Reconnaissance Mapping

Reconnaissance outcrop and regolith mapping were undertaken to gain an understanding of the geological setting and to enable subsequent exploration programs to be planned using appropriate techniques.

Rudimentary regolith domains were designated as follows (Figure 4):

i. Low-moderate relief areas of largely outcropping Proterozoic basement
ii. Low-relief erosional plains, including patchy areas of subcropping basement, ferricrete deposits and shallow sandy cover
iii. Low-relief depositional planes, commonly with significant Tertiary cover, overlain by sandy Aeolian deposits and east-west linear dune systems

During the reconnaissance mapping, 18 rock chip samples were collected. One sample of quartz vein float contained 51ppb Au.
5.1.2 Soil & LAG Sampling

Soil and LAG sampling was undertaken in the western part of EL27511 (Table 3). Sampling was completed on a 500m x 500m grid, and limited to areas of shallow cover or erosional plains (Figure 5). At each site, a -80# size fraction soil was collected from approximately 30cm depth. Where available, LAG samples (-6mm+2mm, typically comprising ferricrete nodules and quartz/lithic fragments) were also collected at each site.

Table 3: Surface Geochemistry Sampling Details for EL27511

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>No. of samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil</td>
<td>259</td>
</tr>
<tr>
<td>LAG</td>
<td>100</td>
</tr>
</tbody>
</table>

No significant gold anomalism was identified in the soil or LAG samples.
5.1.3 Vacuum Drilling

Vacuum drilling was planned to test the regional structural corridor between the Tanami and Arunta Provinces, in an area overlain by regolith cover (Figure 6). The program was largely unsuccessful with vacuum drilling deemed unsuitable for testing below the regolith profiles in this area. Whilst highly effective in areas of shallow cover (1-5m) the vacuum rig could not penetrate intersected silcrete horizons. Furthermore, groundwater was typically intersected at 9-10m depth, thus preventing successful drill-testing in parts of the grid.

A total of 208m was drilled in 26 holes within EL27511 (Table 4). Where basement rocks were intersected a sample was collected at the basement/cover interface. For holes that ended in transported cover, a single sample was collected from the bottom of the hole. No anomalous gold or significant pathfinder element response was returned.

All digital data pertaining to the 2015-2016 reporting period are contained in: “EL27511, Annual Technical Report for the period 18/11/2015 to 17/11/2016”.
Figure 6: EL27511 Vacuum Drill Hole Collars (2015-2016)

Table 4: Vacuum drill collar locations (2015-2016)

<table>
<thead>
<tr>
<th>Hole ID</th>
<th>Hole Type</th>
<th>East (GDA94)</th>
<th>North (GDA94)</th>
<th>Dip/Azi</th>
<th>F/Depth</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVR0001</td>
<td>Vacuum</td>
<td>555000</td>
<td>7661000</td>
<td>-90/000</td>
<td>10</td>
<td>Abandoned</td>
</tr>
<tr>
<td>HVR0002</td>
<td>Vacuum</td>
<td>555000</td>
<td>7660500</td>
<td>-90/000</td>
<td>4</td>
<td>Abandoned</td>
</tr>
<tr>
<td>HVR0003</td>
<td>Vacuum</td>
<td>555000</td>
<td>7657500</td>
<td>-90/000</td>
<td>3</td>
<td>Complete</td>
</tr>
<tr>
<td>HVR0004</td>
<td>Vacuum</td>
<td>555000</td>
<td>7658000</td>
<td>-90/000</td>
<td>5</td>
<td>Abandoned</td>
</tr>
<tr>
<td>HVR0005</td>
<td>Vacuum</td>
<td>555000</td>
<td>7658500</td>
<td>-90/000</td>
<td>9</td>
<td>Abandoned</td>
</tr>
<tr>
<td>HVR0006</td>
<td>Vacuum</td>
<td>562000</td>
<td>7659000</td>
<td>-90/000</td>
<td>5</td>
<td>Abandoned</td>
</tr>
<tr>
<td>HVR0007</td>
<td>Vacuum</td>
<td>562000</td>
<td>7658500</td>
<td>-90/000</td>
<td>11</td>
<td>Abandoned</td>
</tr>
<tr>
<td>HVR0008</td>
<td>Vacuum</td>
<td>562000</td>
<td>7655500</td>
<td>-90/000</td>
<td>14</td>
<td>Complete</td>
</tr>
<tr>
<td>HVR0009</td>
<td>Vacuum</td>
<td>564000</td>
<td>7654500</td>
<td>-90/000</td>
<td>11</td>
<td>Abandoned</td>
</tr>
<tr>
<td>HVR0018</td>
<td>Vacuum</td>
<td>563000</td>
<td>7654000</td>
<td>-90/000</td>
<td>5</td>
<td>Complete</td>
</tr>
<tr>
<td>HVR0019</td>
<td>Vacuum</td>
<td>563000</td>
<td>7655000</td>
<td>-90/000</td>
<td>6</td>
<td>Complete</td>
</tr>
<tr>
<td>HVR0020</td>
<td>Vacuum</td>
<td>563000</td>
<td>7655000</td>
<td>-90/000</td>
<td>10</td>
<td>Complete</td>
</tr>
<tr>
<td>HVR0021</td>
<td>Vacuum</td>
<td>563000</td>
<td>7655500</td>
<td>-90/000</td>
<td>10</td>
<td>Abandoned</td>
</tr>
<tr>
<td>HVR0022</td>
<td>Vacuum</td>
<td>562000</td>
<td>7656000</td>
<td>-90/000</td>
<td>9</td>
<td>Abandoned</td>
</tr>
<tr>
<td>HVR0023</td>
<td>Vacuum</td>
<td>562000</td>
<td>7655000</td>
<td>-90/000</td>
<td>7</td>
<td>Complete</td>
</tr>
<tr>
<td>HVR0024</td>
<td>Vacuum</td>
<td>562000</td>
<td>7654500</td>
<td>-90/000</td>
<td>7</td>
<td>Abandoned</td>
</tr>
<tr>
<td>HVR0025</td>
<td>Vacuum</td>
<td>562000</td>
<td>7654000</td>
<td>-90/000</td>
<td>8</td>
<td>Complete</td>
</tr>
<tr>
<td>HVR0040</td>
<td>Vacuum</td>
<td>561000</td>
<td>7654000</td>
<td>-90/000</td>
<td>12</td>
<td>Complete</td>
</tr>
<tr>
<td>HVR0041</td>
<td>Vacuum</td>
<td>561000</td>
<td>7654500</td>
<td>-90/000</td>
<td>14</td>
<td>Complete</td>
</tr>
<tr>
<td>HVR0042</td>
<td>Vacuum</td>
<td>561000</td>
<td>7655000</td>
<td>-90/000</td>
<td>11</td>
<td>Abandoned</td>
</tr>
<tr>
<td>HVR0056</td>
<td>Vacuum</td>
<td>565000</td>
<td>7654000</td>
<td>-90/000</td>
<td>4</td>
<td>Complete</td>
</tr>
<tr>
<td>HVR0057</td>
<td>Vacuum</td>
<td>564033</td>
<td>7654030</td>
<td>-90/000</td>
<td>5</td>
<td>Abandoned</td>
</tr>
<tr>
<td>HVR0058</td>
<td>Vacuum</td>
<td>564000</td>
<td>7654500</td>
<td>-90/000</td>
<td>7</td>
<td>Complete</td>
</tr>
<tr>
<td>HVR0059</td>
<td>Vacuum</td>
<td>565000</td>
<td>7654500</td>
<td>-90/000</td>
<td>6</td>
<td>Complete</td>
</tr>
<tr>
<td>HVR0060</td>
<td>Vacuum</td>
<td>565000</td>
<td>7655000</td>
<td>-90/000</td>
<td>11</td>
<td>Abandoned</td>
</tr>
<tr>
<td>HVR0061</td>
<td>Vacuum</td>
<td>565000</td>
<td>7654500</td>
<td>-90/000</td>
<td>4</td>
<td>Abandoned</td>
</tr>
</tbody>
</table>
5.2 Exploration 2016-2017 (Ramelius Resources Ltd)

Exploration completed during the 2016-2017 reporting period comprised:

- Target generation
- Reconnaissance mapping & rock chip sampling
- Soil sampling

The surface sampling sites are shown in Figure 7.

![Figure 7: EL27511 Exploration Index Map for 2016-2017 reporting period](image)

5.2.1 Target Generation

A review of open-file data, detailed aeromagnetic imagery obtained from Newmont and geochromical data from Ramelius work in 2016 was undertaken. This led to the identification of 9 target areas within EL27511. These targets are listed in Table 5 and shown in Figure 8.
### Table 5: Targets identified in EL27511 (2016-2017)

<table>
<thead>
<tr>
<th>Target</th>
<th>Target Type</th>
<th>Comments</th>
<th>Recommended Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR_T4</td>
<td>Geochem</td>
<td>As in soil anomalism</td>
<td>Field check of regolith</td>
</tr>
<tr>
<td>HR_T6</td>
<td>Geochem</td>
<td>Poor repeatability of soil results from 2015-2016 program</td>
<td>Field check of regolith &amp; infill sampling</td>
</tr>
<tr>
<td>HR_11</td>
<td>Geochem / Geophysics</td>
<td>NW trending zone of Au + As anomalism in RAB, soil &amp; LAG samples</td>
<td>Field check</td>
</tr>
<tr>
<td>HR_12</td>
<td>Geochem</td>
<td>Bi anomaly</td>
<td>-</td>
</tr>
<tr>
<td>HR_13</td>
<td>Geochem</td>
<td>As + Sb anomalism</td>
<td>Soil sampling if suitable regolith</td>
</tr>
<tr>
<td>HR_15</td>
<td>Geophysics</td>
<td>ENE structures disrupting folded stratigraphy</td>
<td>-</td>
</tr>
<tr>
<td>HR_16</td>
<td>Geophysics</td>
<td>ENE trending fold closures</td>
<td>-</td>
</tr>
<tr>
<td>HR_17</td>
<td>Geochem / Geophysics</td>
<td>Truncated stratigraphy with As anomalism in LAG sampling</td>
<td>-</td>
</tr>
<tr>
<td>HR_24</td>
<td>Geochem / Geophysics</td>
<td>As anomalism on north side of magnetic stratigraphy</td>
<td>-</td>
</tr>
</tbody>
</table>

**Figure 8:** EL27511 Exploration Targets on aeromagnetic image (2016-2017)
5.2.2 Reconnaissance Mapping

Reconnaissance mapping of target areas was undertaken to determine the suitability of regolith profiles for surface sampling. This resulted in soil programs planned for parts of targets HR_4, HR_6 and HR_13.

5.2.3 Soil and Rock-chip Samping

Nine rockchip samples were collected during the reconnaissance mapping, with no gold anomalism recorded.

Soil sampling was undertaken across three target areas (HR_4, HR_6 and HR_13). Sampling was completed on a 500m x 500m grid, and limited to areas of shallow cover or erosional plains. At each site, a 2-3kg sample of material sieved to 0.5mm was collected from approximately 30cm depth. No significant gold or arsenic anomalism was identified.

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>No. of samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil</td>
<td>107</td>
</tr>
<tr>
<td>Rockchip</td>
<td>9</td>
</tr>
</tbody>
</table>

All digital data pertaining to the 2016-2017 reporting period are contained in: “EL27511, Annual Technical Report for the period 18/11/2016 to 17/11/2017”.

6. EXPLORATION COMPLETED IN FINAL PERIOD OF TENURE (2017-2018)

No exploration was completed on EL27511 during the final period of tenure (18/11/2017 to 16/11/2018).

Rehabilitation of all disturbed areas, including drill sites and access tracks was completed.

The company conducted a review of work completed on the Tanami projects and the license was surrendered on 16th November, 2018.
7. REFERENCES


