



**SUPLEJACK PROJECT**

**EL 26625**

**Annual Technical Report**

**For the Period 24/05/2016 to 23/05/2017**

|                          |                                       |         |        |
|--------------------------|---------------------------------------|---------|--------|
| <b>Tenure Holder:</b>    | Tychean Resources Limited             |         |        |
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| <b>Date:</b>             | 26/05/2017                            |         |        |
| <b>Mapsheets:</b>        | 1:250,000                             | SE52-15 | Tanami |
|                          | 1:100,000                             | 4958    | Buck   |
| <b>Target Commodity:</b> | Gold                                  |         |        |

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Tychean Resources Ltd  
Ramelius Resources Ltd

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## Abstract

This report discusses exploration activities on EL26625, located c. 575km north-west of Alice Springs, Northern Territory, for the sixth year of tenure, covering the period 24<sup>th</sup> May 2016 to 23<sup>rd</sup> May 2017.

Exploration License EL26625 was granted to Tychean Resources Ltd (Tychean; formerly ERO Mining Ltd) on 24<sup>th</sup> May 2011 for a period of 6 years. During the 2014-2015 reporting period, Ramelius Resources Ltd entered into a Farm-in Agreement with Tychean Resources Limited, comprising the Tanami Joint Venture, which includes EL26625. Ramelius are operators of the project and have earned an 85% Joint Venture Interest in the tenement.

The target commodity of EL26625 is gold. The tenement contains several prospective targets in Tanami Group basement rocks. These target areas underlie substantial thickness of Cambrian and Tertiary cover, which has largely precluded effective exploration in the past.

Work carried out on the license during the reporting period included 1 programme of reconnaissance RC drilling. Drilling comprised 18 holes for 1494m and generated 354 drill samples. The drilling returned a number of anomalous interface results, with the highest result (77ppb Au) overlying a zone of strong sericite alteration in pelitic schist lithologies. The broader interface gold anomaly (+10ppb) is now defined over 2km strike in the eastern side of the Suplejack structure. The company will further assess the anomaly in conjunction with geophysical targets to determine whether deeper drilling is warranted.

During the forthcoming year, the company plans to conduct further exploration over the Dead Bullock Formation litho-structural target, including the northern and southern part of the EL26625. The work programme includes assessment and interpretation of geochemical signatures derived from the current drilling (2015-2017), and geochemical sampling, as well as air-core drilling over selected target areas in the northern and southern parts of the license.

## 1. INTRODUCTION

EL26625 is currently held by Tychean Resources Ltd, and operated under joint venture by Ramelius Resources Ltd. This report summarises the exploration activities carried out for the sixth year of tenure, covering the period 24<sup>th</sup> May 2016 to 23<sup>rd</sup> May 2017.

Work carried out on the license during the period included

- 1494m of reconnaissance RC drilling

### 1.1 Location and Access

Exploration License EL26625 is located approximately 575km north-west of Alice Springs, Northern Territory. The license covers 26 sub-blocks for a total area of 84 square kilometres. Vehicle access from Alice Springs is by way of the Tanami Highway to Rabbit Flat, thence northwards approximately 35km by tracks to the tenement. Figure 1 shows the location of EL 26625.

### 1.2 Tenure and Land Status

Exploration License EL26625 was granted to Tychean Resources Ltd (Tychean; formerly ERO Mining Ltd) on 24<sup>th</sup> May 2011 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. Ramelius have since 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.

The license originally comprised 52 sub-blocks, which was subsequently reduced to 26 blocks at the end of the second year of tenure (2013). Prior to the end of the 4<sup>th</sup> year of tenure (2015), the company applied for a waiver of reduction of a further 13 sub-blocks from the tenement, to allow retention of all 26 blocks. In April 2017, the company applied for renewal of the license and a waiver of reduction.

The company have entered into negotiations with the Central Land Council (CLC) in respect of EL26625, being land vested in the Central Desert Aboriginal Land Trust NTP 1740. 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 September, 2008. A Deed for Exploration was finalised with the CLC on 1<sup>st</sup> February, 2011. Owing to a shift in the focus of the company's exploration strategy, an updated Exploration and Mining Proposal was provided to the CLC in July, 2014.

**Table 1: Tenement details for EL26625**

| Tenement | Holder                | Operator               | Grant Date | Expiry Date | Sub-Blocks | Exp. Commitment 2016-17 |
|----------|-----------------------|------------------------|------------|-------------|------------|-------------------------|
| EL26625  | Tychean Resources Ltd | Ramelius Resources Ltd | 24/05/11   | 23/05/17    | 26         | \$105,000               |

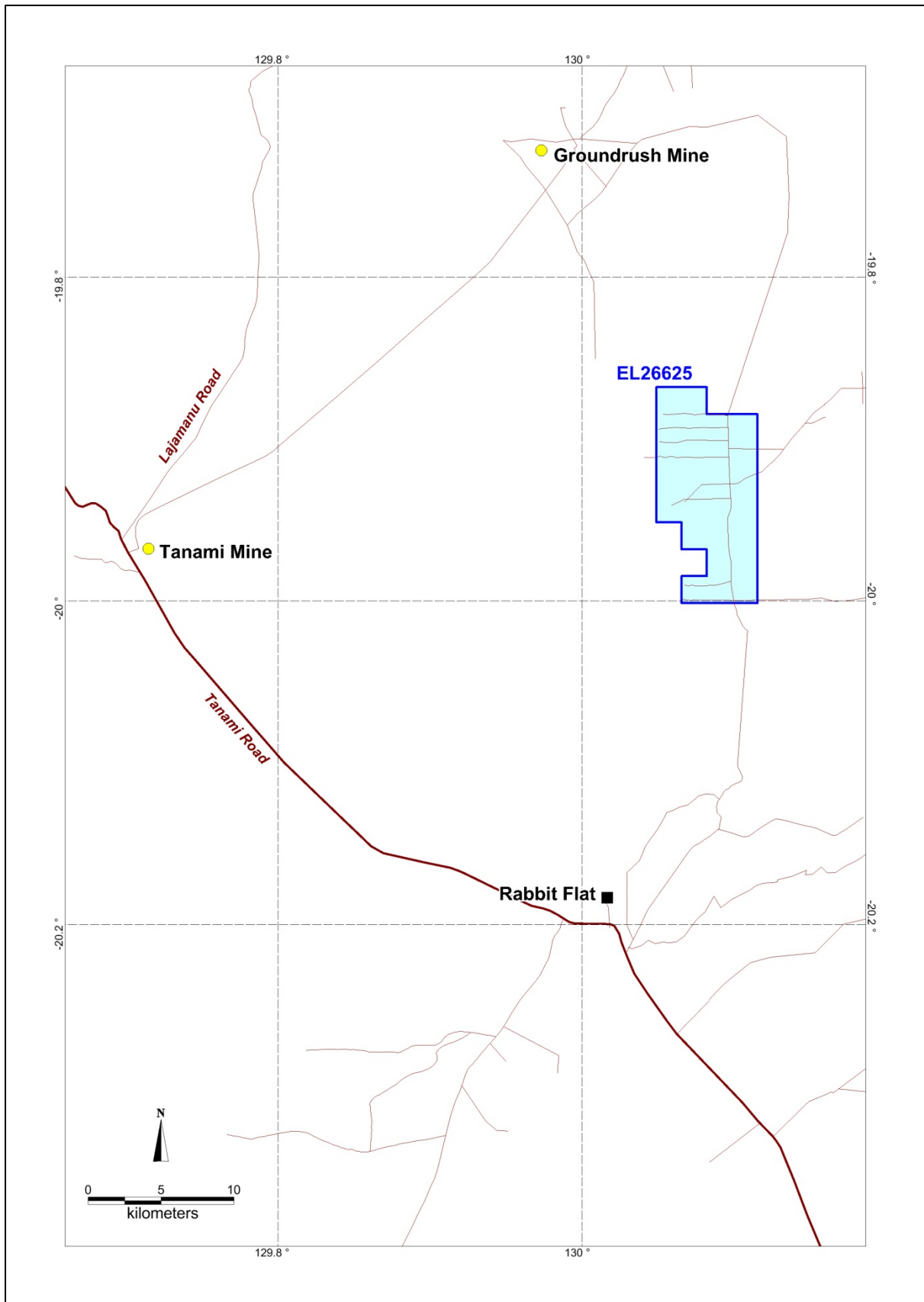


Figure 1: Locality plan showing tenement EL26625

## **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)

Within the Suplejack EL 26625, the basement Proterozoic “Tanami Group” geology includes Dead Bullock Formation (DBF) units comprising siltstone, metapelite, chert and amphibolite, conformably overlain to the east by the Killi Killi Formation, which comprises turbiditic sandstones (Figure 2). The basement DBF lithologies show complex deformation, with the sequence is tightly folded around NW-trending axial planes, and a WNW-trending regional fault also offsets the central part of the structure. The western part of the project area includes intrusive granodiorite of the Palaeoproterozoic Coomarie Suite.

Proterozoic Gardiner Sandstone and Cambrian basalt flows unconformably overlie and conceal much of the Tanami Group Basement, and Tertiary colluvial sheetwash and aeolian sands overlie much of the project area.

Styles of gold mineralisation in the Tanami Region are predominantly Orogenic lode gold deposits, predominantly within mafic volcanic and sedimentary lithologies of the Dead Bullock Formation (e.g. DBS and Granites Goldfields). Several gold deposits located north of the Suplejack EL include the Hyperion Project (200,000oz Au; quartz-carbonate vein-hosted deposits within granitic, doleritic and metasedimentary rocks) and the Groundrush Deposit (460,000oz; hosted in foliated dolerite sill within metagreywacke of the Killi Killi Formation.

## **3. PREVIOUS EXPLORATION**

### **3.1 Exploration prior to 2011**

The area covering EL26625 was explored by Zapopan Ltd from 1990 to 1995, as part of historic license EL5411 (Lake Buck South Project). The exploration model was reconnaissance testing of the Tanami Group stratigraphy, largely concealed by Cambrian to Recent cover, to the east of the Coomarie Suite granitoids. Work carried out included ground magnetic surveys, RAB drilling (134 holes for 896m) and RC drilling (76 holes for 4191m). However, the majority of drilling during this period was ineffective as most holes failed to penetrate the Cambrian basalt cover sequence. A limited number of drill-holes intersected basement lithologies, including RC hole WFRC0009, which returned 9m @ 76ppb Au. Follow-up drilling around this anomaly failed to return anomalous results and the license was relinquished soon after.

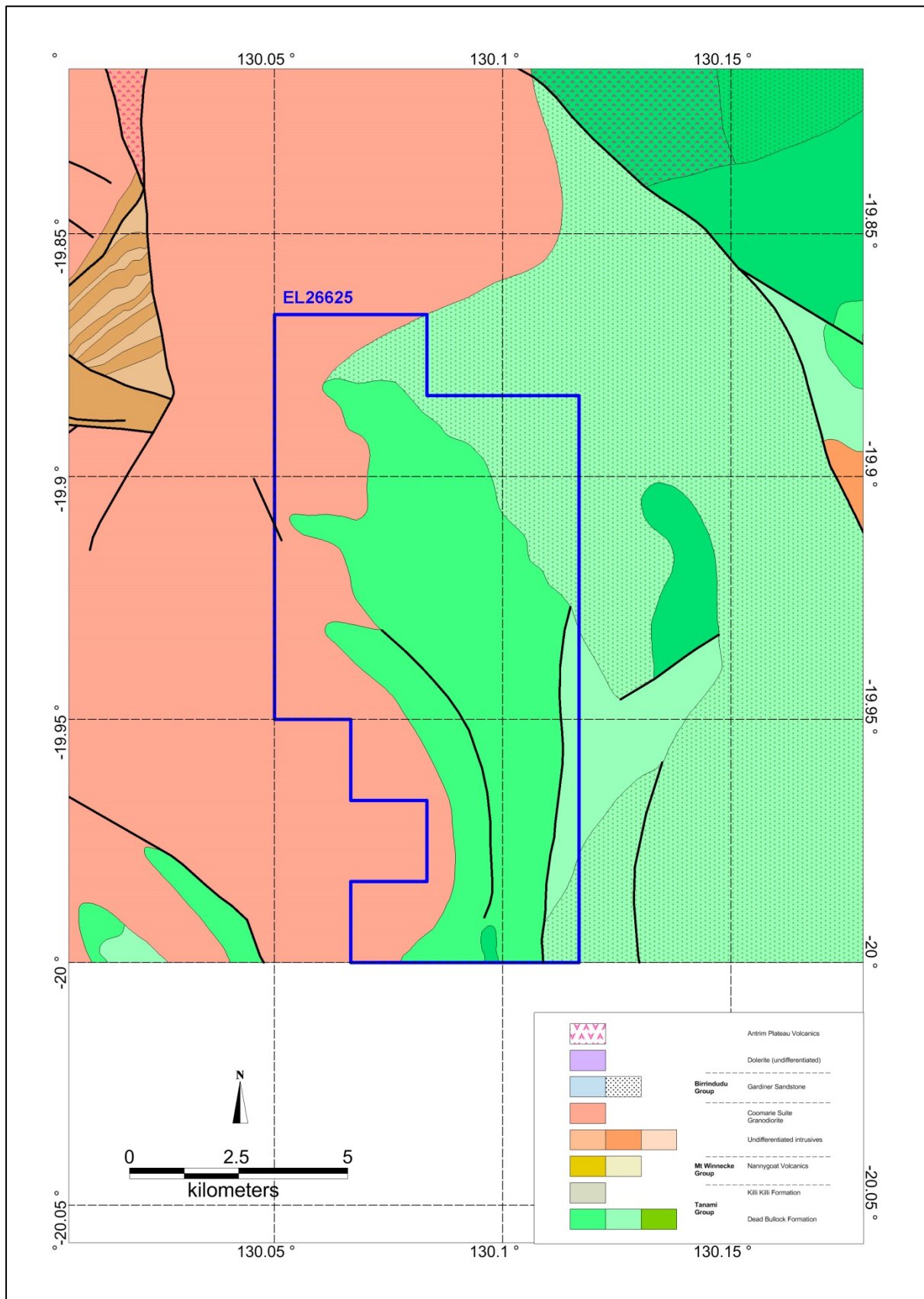


Figure 2: EL26625 Regional Geology



### 3.2 Exploration 2011-2014 (Tychean Resources)

Since acquiring the license, exploration by Tychean Resources has mainly comprised desktop studies, including historical data acquisition and compilation, interpretation of regional aeromagnetics, and geological targeting.

### 3.3 Exploration 2014-2015 (Ramelius Resources Ltd)

Work completed by Ramelius Resources during the 2014-2015 reporting period comprised:

- Office studies, including compilation and interpretation of all historical exploration and open file government data, re-processing of aeromagnetic data, resulting in a geological interpretation and targeting strategy for the project.
- RC drilling of selected target areas, comprising 15 holes for 1206m.

Reconnaissance RC drilling was carried out over a 4km x 3km area over the central part of the Suplejack structural target and comprised 15 holes for 1206m and generated 349 drill samples. Drilling highlighted several gold/pathfinder anomalous zones at the interface between Cambrian basalt cover and underlying Tanami Group basement rocks.

### 3.3 Exploration 2015-2016 (Ramelius Resources Ltd)

Work completed by Ramelius Resources during the 2015-2016 reporting period comprised:

- 2 programmes of RC drilling over selected target areas.

RC drilling comprised 39 holes for 3879m and generated 1206 drill samples. Drilling has delineated a significant NW-trending gold/pathfinder anomalous zone in the eastern part of the project, at the interface between Cambrian basalt cover and underlying Tanami Group basement rocks.

### 3.4 Exploration Rationale

The Suplejack structure shows a number of geological characteristics consistent with targeting strategies for gold mineralisation in the Tanami Region, including:

**Favourable host stratigraphy** - Basement lithologies are interpreted as Dead Bullock Formation sedimentary units of the Proterozoic Tanami Group (likely Callie Member), largely comprising siltstones and carbonaceous schists with lesser chert, BIF, sandstone and amphibolite lithologies.

**Complex structural setting** - Basement Tanami Group lithologies show complex deformation - the sequence is tightly folded around NW-trending axial planes, and a WNW-trending regional fault also offsets the central part of the structure. This litho-structural environment shows broad similarities to the Callie deposit, as well as several advanced Newmont prospects to the south of Suplejack (e.g. Challenger, Golconda).

The Tanami Group basement is overlain by a complex cover sequence in excess of 50m, including Neoproterozoic sandstones, Ordovician basalts and Tertiary units. Previous drilling over the target (Zapopan NL) has been largely ineffective, with only several holes (of +100 drilled) intersecting basement lithologies. One such drill-hole returned anomalous gold (9m @ 76ppb from 63m) in sheared and altered, Dead Bullock Formation lithologies.

Ramelius Resources concluded that reconnaissance drilling is required to test the Suplejack target over a broad area. The main objective of drilling programmes would be to test for regional gold and pathfinder anomalism at the cover/basement interface. If suitably anomalous results were returned from this level, infill drilling and/or further geophysical targeting (e.g. TEM) would be warranted.

## **4. EXPLORATION COMPLETED 2016 – 2017**

Exploration completed during the 2016-2017 reporting period comprised:

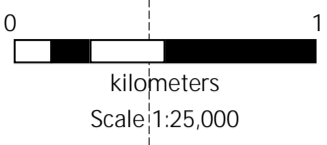
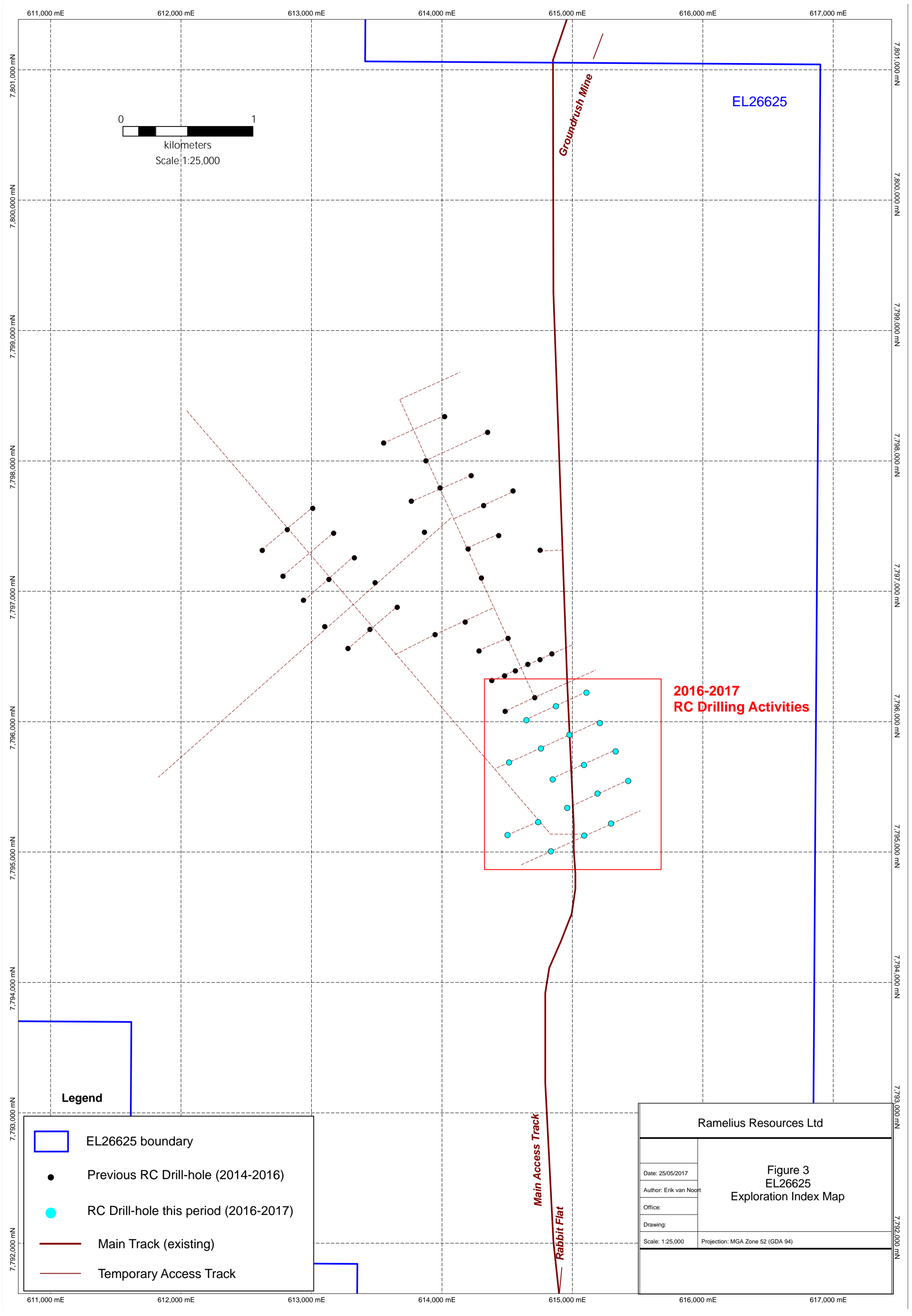
- RC Drilling – 18 holes for 1494m.

### **4.1 RC Drilling**

RC Drilling was completed at the Suplejack Project, with 18 holes completed for a total of 1494m (Tables 2 and 3). Drilling was carried out in the south-eastern part of the project to follow up potential extensions to interface gold anomalism (i.e. +10ppb, up to 67ppb) encountered in previous drilling campaigns. The geochemical anomaly corresponds with a structural target defined by the confluence of a regional, NW-trending dextral shear and fold closure within Dead Bullock Formation stratigraphy, which includes graphitic schists, siltstones, chert and amphibolite (Figure 4).

All digital data from the drilling programmes are included with this report. Geological logging codes are also provided as the attached digital files *EL26625\_2017\_A\_12\_CodesLith.pdf* and *EL26625\_2017\_A\_13\_CodesOther.pdf*.

All holes were drilled vertical to test interface/basement anomalism and evaluate basement geology. Of 18 holes drilled, 14 successfully penetrated Proterozoic basement, whilst 4 were abandoned in Gardiner Formation lithologies above the cover-basement interface. Drill-holes were sampled at 1m intervals from several metres above the interface to the end of hole. A total of 354 samples were collected and submitted to Genalysis Laboratories, Alice Springs for low-level fire-assay Au.



EL26625

2016-2017  
RC Drilling Activities

**Legend**

- EL26625 boundary
- Previous RC Drill-hole (2014-2016)
- RC Drill-hole this period (2016-2017)
- Main Track (existing)
- Temporary Access Track

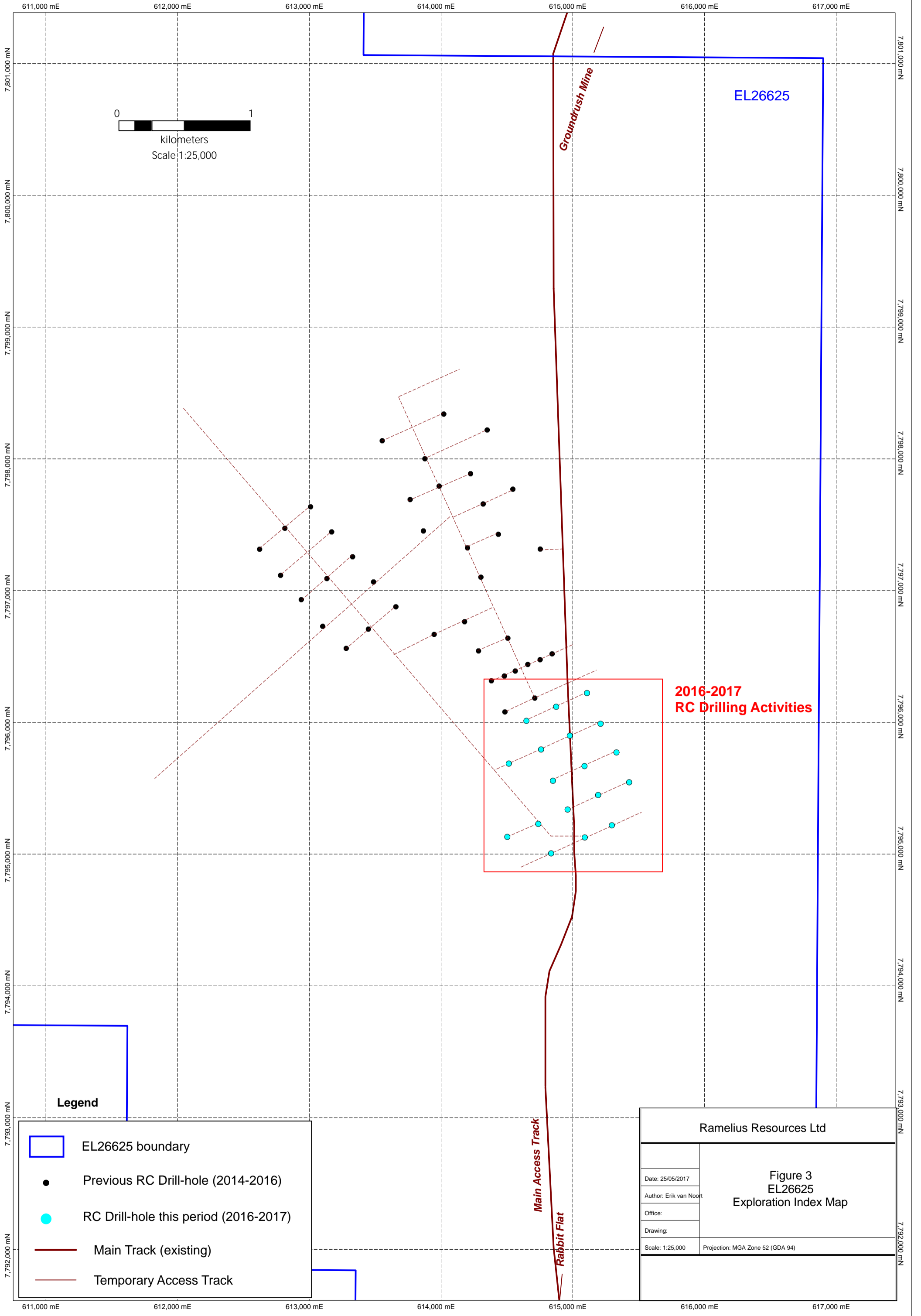
Ramelius Resources Ltd

|   |                                  |
|---|----------------------------------|
| <p>Figure 3<br/>EL26625<br/>Exploration Index Map</p> |                                  |
| Date: 25/05/2017                                      |                                  |
| Author: Erik van Noort                                |                                  |
| Office:   |                                  |
| Drawing:  |                                  |
| Scale: 1:25,000                                       | Projection: MGA Zone 52 (GDA 94) |

Main Access Track

Rabbit Flat

Groundtrush Mine



**Table 2: Summary Drilling Table**

| Hole Type | Hole Number range | No. Holes | Total metres | Samples |
|-----------|-------------------|-----------|--------------|---------|
| RC        | SJRC0055-0072     | 18        | 1494         | 354     |

**Table 3: RC drill collar locations**

| Hole ID  | Hole Type | East (GDA94) | North (GDA94) | Dip/Azi | F/Depth | Status    |
|----------|-----------|--------------|---------------|---------|---------|-----------|
| SJRC0055 | RC        | 615108       | 7796222       | -90/000 | 84      | Complete  |
| SJRC0056 | RC        | 614874       | 7796118       | -90/000 | 84      | Complete  |
| SJRC0057 | RC        | 614648       | 7796011       | -90/000 | 90      | Complete  |
| SJRC0058 | RC        | 614514       | 7795687       | -90/000 | 90      | Complete  |
| SJRC0059 | RC        | 614759       | 7795794       | -90/000 | 84      | Complete  |
| SJRC0060 | RC        | 614977       | 7795899       | -90/000 | 78      | Complete  |
| SJRC0061 | RC        | 615211       | 7795989       | -90/000 | 102     | Abandoned |
| SJRC0062 | RC        | 614849       | 7795557       | -90/000 | 96      | Complete  |
| SJRC0063 | RC        | 615089       | 7795668       | -90/000 | 90      | Complete  |
| SJRC0064 | RC        | 615331       | 7795772       | -90/000 | 104     | Abandoned |
| SJRC0065 | RC        | 614961       | 7795339       | -90/000 | 66      | Complete  |
| SJRC0066 | RC        | 615193       | 7795449       | -90/000 | 66      | Complete  |
| SJRC0067 | RC        | 615428       | 7795545       | -90/000 | 74      | Abandoned |
| SJRC0068 | RC        | 615091       | 7795127       | -90/000 | 60      | Complete  |
| SJRC0069 | RC        | 615296       | 7795219       | -90/000 | 48      | Complete  |
| SJRC0070 | RC        | 614738       | 7795229       | -90/000 | 90      | Complete  |
| SJRC0071 | RC        | 614503       | 7795131       | -90/000 | 96      | Complete  |
| SJRC0072 | RC        | 614836       | 7795006       | -90/000 | 92      | Abandoned |

Drilling over the SE target encountered cover sequences averaging 74m depth, mainly comprising Tertiary sediments and Cambrian basalts. Thick sequences of Gardiner Formation sandstones, in excess of 20m, overlie Proterozoic basement on the eastern and western margins of the drilled area. Owing to high water flows and abundance of running sands, several holes were unable to penetrate this sequence and subsequently abandoned.

Basement, Dead Bullock Formation lithologies within the SE target area mainly comprise variably altered, moderate to strongly sheared pelitic to psamo-pelitic schists. The previously identified, SE-trending, graphitic/carbonaceous schist unit (with associated Au-As-Cu-Mo anomalism) continues to the southeast over 1km strike, on the northern margin of the inferred, regional dextral shear (Figure 4). The graphitic schist was not encountered in drill-holes to the south of the shear zone.

Chert and lesser BIF, interbedded with pelitic schists, were encountered in several holes on the southern margin of the grid (Figure 4). Such lithologies are associated with a prominent paleo-topographic high and are also defined by broad aeromagnetic anomaly. Structural thickening of the chert/BIF units are likely associated with the regional fold closure in this position. A broad zone of sericite (+/-pyrite) alteration within pelitic schists, extending over approximately 1km strike,

corresponds with the interpreted fold closure and dextral shear to the north of the chert units (Figure 4).

The drilling returned a number of anomalous interface results, with the highest result (77ppb Au) overlying a zone of strong sericite alteration in pelitic schist lithologies (Figure 4). Other anomalous values, up to 35ppm Au, overlie ferruginous chert basement lithologies, associated with a prominent palaeo-topographic high in the southern part of the drilled area (weakly anomalous Au was also associated with the chert below the interface). The graphitic schist, encountered and shown to be anomalous in previous programmes to the north of the current drilling, was intercepted to the north of the abovementioned ferruginous chert. However, no anomalism was returned from or above the graphitic schist in this position.

Results from the current programme returned patchy, discontinuous interface and basement anomalism in the area targeted. The broader interface gold anomaly (+10ppb) is now defined over 2km strike in the eastern side of the Suplejack structure. The company will further assess the anomaly in conjunction with geophysical targets to determine whether deeper drilling is warranted.

**Table 4: Anomalous gold intercepts from reconnaissance interface RC drilling at Suplejack.**

| Hole_ID  | MGA_E  | MGA_N   | Hole_Depth | m_from | m_To | Interval (m) | Au_ppb |
|----------|--------|---------|------------|--------|------|--------------|--------|
| SJRC0055 | 615108 | 7796222 | 84         | 69     | 70   | 1            | 12     |
| SJRC0057 | 614648 | 7796011 | 90         | 73     | 74   | 1            | 15     |
| SJRC0058 | 614514 | 7795687 | 90         | 82     | 83   | 1            | 18     |
| SJRC0060 | 614977 | 7795899 | 78         | 67     | 68   | 1            | 77     |
| SJRC0065 | 614961 | 7795339 | 66         | 48     | 49   | 1            | 11     |
|          |        |         |            | 56     | 59   | 3            | 25     |
|          |        |         |            | 60     | 61   | 1            | 13     |
| SJRC0066 | 615193 | 7795449 | 66         | 49     | 56   | 7            | 23     |
| SJRC0069 | 615296 | 7795219 | 48         | 37     | 38   | 1            | 35     |

## 5. EXPLORATION PROPOSAL

During the forthcoming year, the company would like to conduct further exploration over the Dead Bullock Formation litho-structural target, including the northern and southern part of the EL26625. These areas have seen only limited historical exploration. Specific activities planned for 2017-2018 include:

- Detailed assessment and interpretation of geochemical signatures derived from the current drilling (2015-2017).
- Re-interpretation of aeromagnetics based on recent drilling results, and enhanced understanding of basement lithologies.
- Geochemical sampling, as well as air-core drilling over selected target areas in the northern and southern parts of the license.

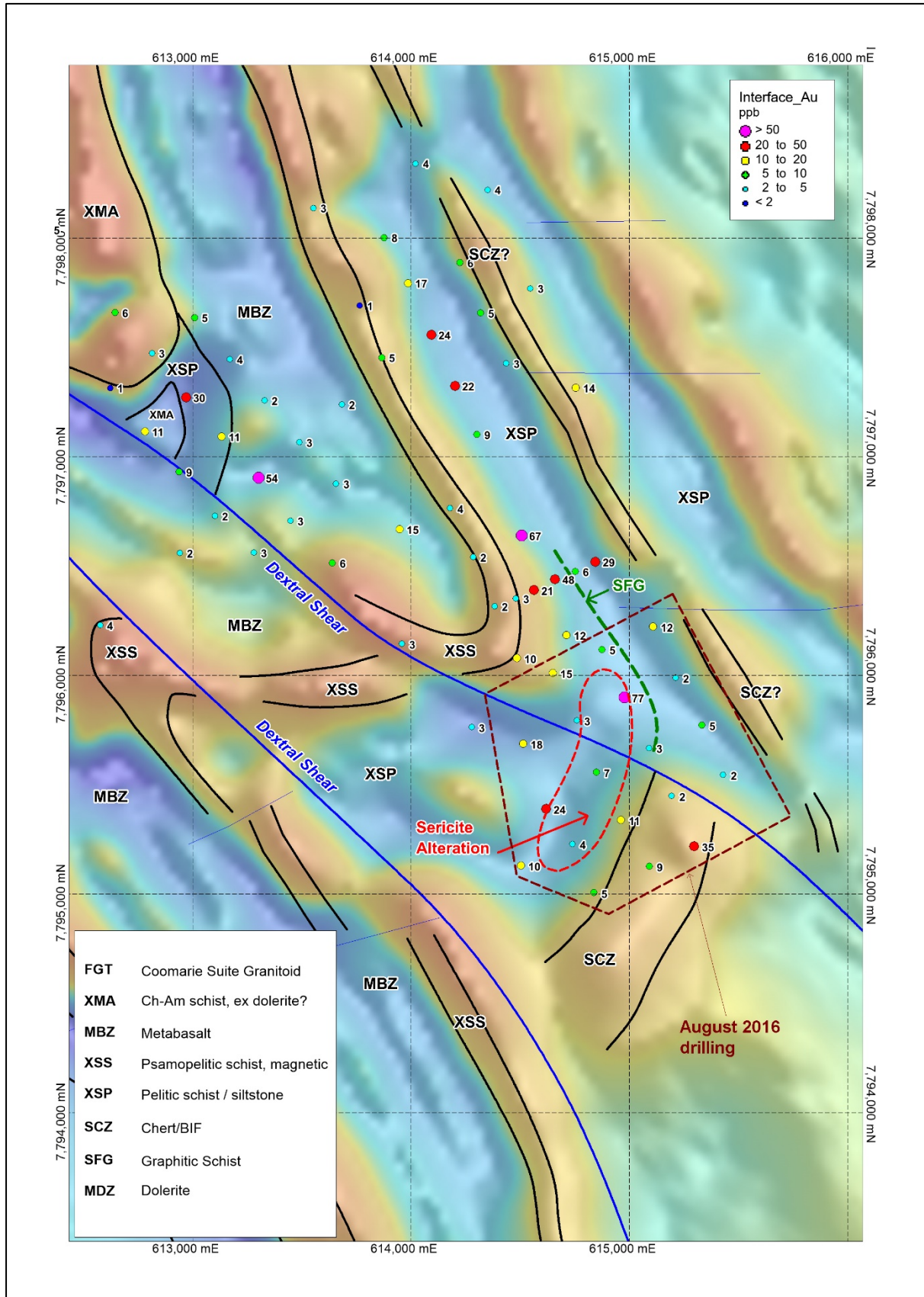


Figure 4: EL26625 drill-hole locations, interface Au results, and interp geology over 1VDRTP aeromagnetics

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