

# **Open File Envelope**

## **No. 12,298**

**EL 4765**

**MATTAWEARA NORTH**

**ANNUAL REPORTS AND FINAL REPORT  
TO LICENCE SURRENDER, FOR THE PERIOD  
11/7/2011 TO 18/12/2014**

Submitted by  
Soaraway Development Pty Ltd  
2015

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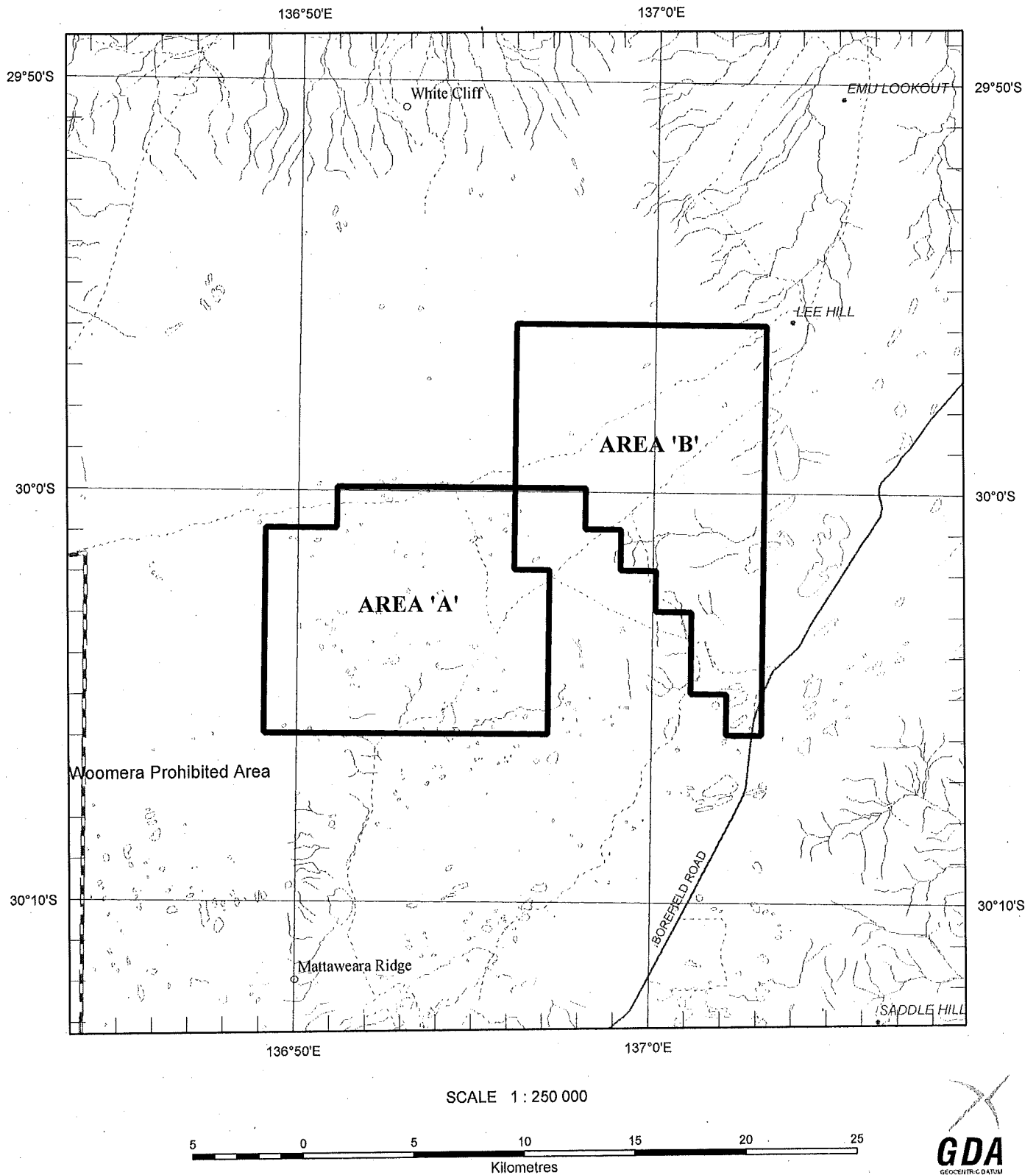
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# SCHEDULE A



LICENCE BOUNDARIES IN : DATUM AGD66

APPLICANT : **SOARAWAY DEVELOPMENT PTY LTD**

FILE REF : **2010/00342**

TYPE : **MINERAL ONLY**

AREA : **264** sq km (approx)

1 : 250 000 MAPSHEETS : **CURDIMURKA ANDAMOOKA**

LOCALITY : **ANDAMOOKA AREA - Approximately 50 km north of Roxby Downs**

DATE GRANTED: **11-Jul-2011**

DATE EXPIRED: **10-Jul-2013**

EL NO: **4765**



**Government of South Australia**  
Department of State Development

**Annual Report**  
**-**  
**EL4765, South Australia**

**For the period of**  
**11 July 2011 – 10 July 2012**

August 2012

Soaraway Development Limited

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## Summary Points

- EL4765 was granted for a term of 2 years ends on 10 July 2013
- Tenement is 40km north of Olympic Dam Mine and 5-10km north of Vulcan and Titan Prospects, potential for IOCGU style mineralisation
- Relatively thick Neoproterozoic sediment cover, ~600m-1000m to crystalline basement
- The region has high-resolution aeromagnetics, but poor gravity data (~1.5km X 1.5km)
- Field surveys in the area suggest a gravity survey in the western portion of the tenement.
- A proposal for gravity acquisition (in-fills) and interpretation will cost ~\$100000, for an area ~70km<sup>2</sup>
- A potential 1500m-hole costs ~\$350000

## Keywords

EL4765, Mattaweara 100K, Curdimurka 250K, Andamooka, Olympic Dam, Cu-Au, uranium, gravity, drilling, Early Mesoproterozoic, Hiltaba Suite, Gawler Craton, Vulcan Prospect, Titan Prospect

## 1. Introduction

The tenement EL4765 was granted for a term of 2 years commencing on 11 July 2011. The tenement area, ~570km north of Adelaide and ~40km north of Olympic Dam Mine, contains ~264Km<sup>2</sup> located in the eastern Gawler Craton (Figure 1), and all area is covered by modern sand dunes and gravels (Figure 2). The mineralisation in the area is poorly known and only 2 shallow holes were bottomed in Cambrian-Neoproterozoic sediments. The tenement is well known for potential of IOCGU style mineralisation, but Cambrian-Neoproterozoic sediment cover can be up to 500-1000m deep. Geophysical surveys (mainly gravity) may be needed for detailed study for the deep-buried IOCGU targets.

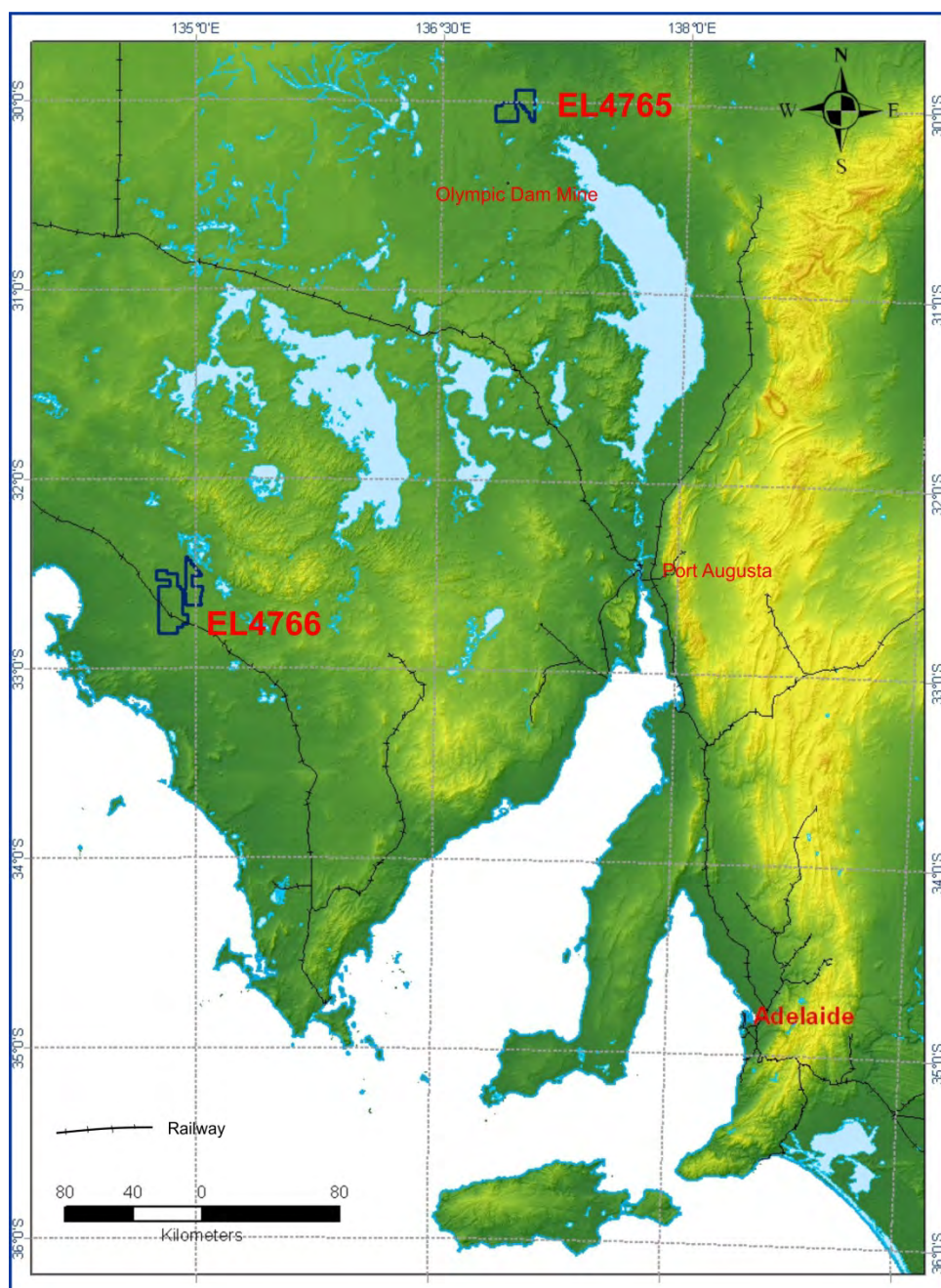


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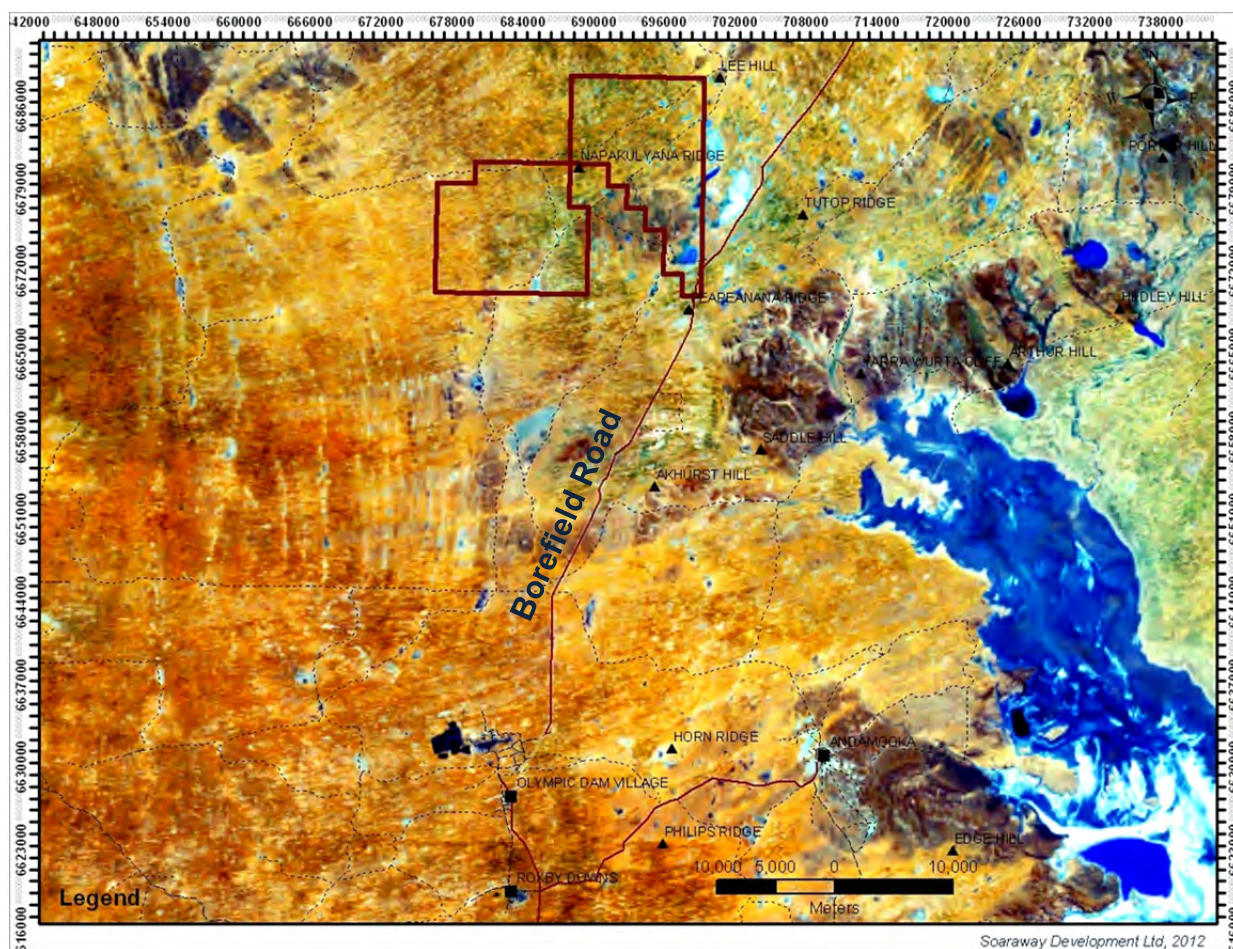


Figure 2. Landsat image shows the EL4765 and location of the Olympic Dam Mine.

Soaraway Development Ltd has undertaken a detailed study of geophysics and geology in the tenement areas during 2011-2012. A field trip to the EL4765 area during the March 2012 enables to understand local and regional geology and mineralisation styles (Photo 1). A ground gravity survey is proposed in the area for finding drilling targets.



Photo 1. Photograph of the trip during March 2012.

## 2. Tenement Status

The EL4766 area is located north of the Olympic Dam Mine and connected by Borefield Road (Figure 3). There are several 4WD tracks cross the tenement.

The tenement will be expired at 10 July 2013 (Table 1).

Table 1. Current status of EL4765 (downloaded from SARIG 2012).

| Tenement Number | Tenement Status | Licencees                           | Operators                    | Commodities Sought         | Location                                        | Tenement Start Date | Tenement Expiry Date | Tenement Surrender Date | Area Legal |
|-----------------|-----------------|-------------------------------------|------------------------------|----------------------------|-------------------------------------------------|---------------------|----------------------|-------------------------|------------|
| EL 4765         | Active          | Soaraway Development Pty Ltd (100%) | Soaraway Development Pty Ltd | Uranium; Base Metals; Gold | Andamooka area approx 50km north of Roxby Downs | 11/07/2011          | 10/07/2013           | null                    | 264 sq km  |

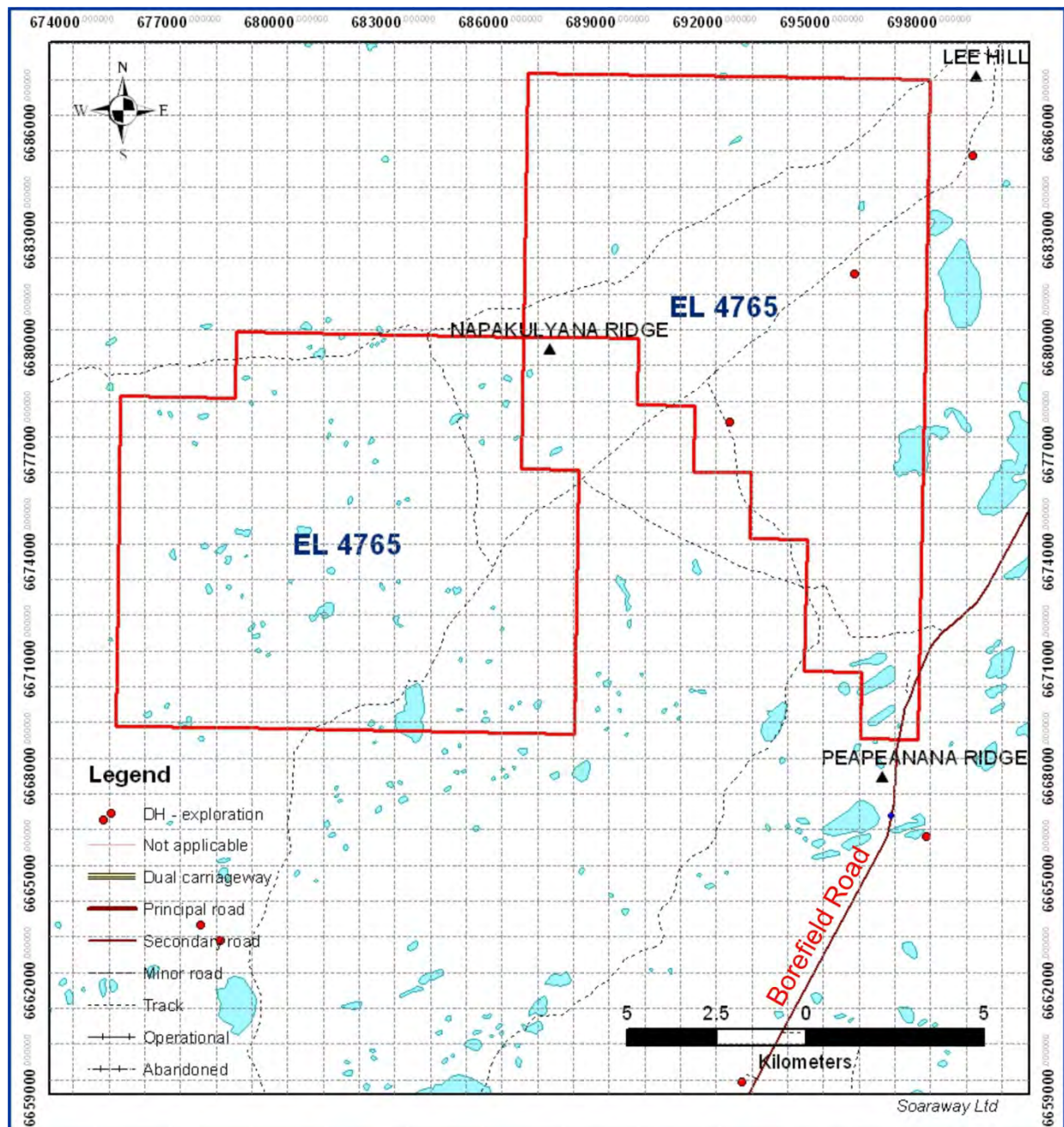


Figure 3. Index map shows the roads related to EL 4765.

### 3. Tectonics and Mineralisation

Tenement EL4765 is located in the eastern Gawler Craton, where is named to be a IOCGU mineralisation belt or corridor that is represented by the Olympic Dam deposits (Figure 4). A number of mines and deposits are present in the belt, including recently discovered Hillside deposits down to south.

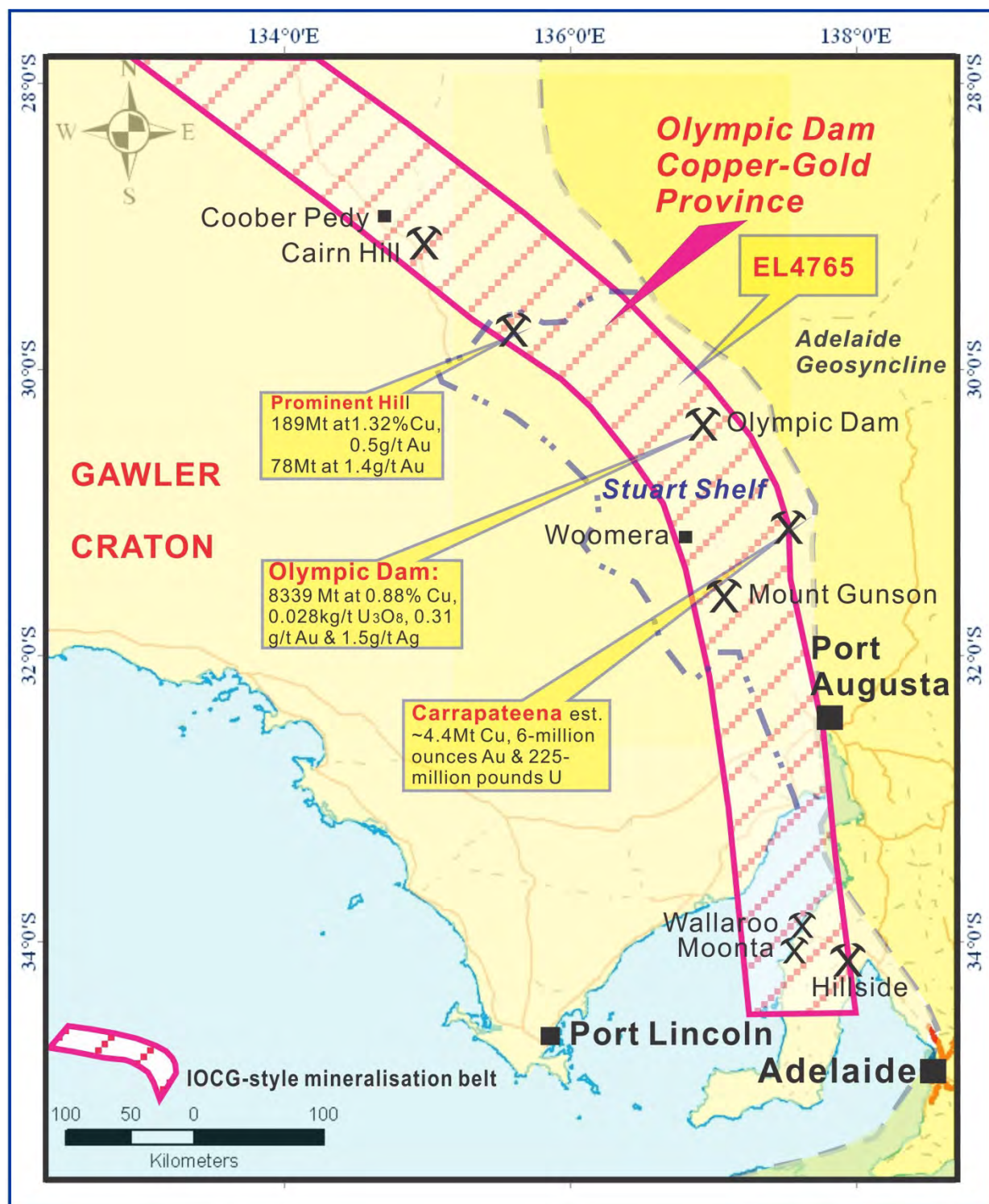


Figure 4. Index figure shows the IOCGU mineralisation belt in the eastern Gawler Craton.

The tenement area was held by Western Mining Ltd (WMC) since the discovery of the Olympic Dam deposit, which also undertook extensive geophysical surveys and drilling in the region. Further exploration by Tasman Resources Ltd resulted the finding of 2 prospective mineralisation targets, Titan and Vulcan Prospects (Figure 5). Of the 2 prospects, The Vulcan Prospect is located ~8km south of the EL4765. At Vulcan, all eight drill holes intersected mineralization. Hole VUD 7 intersected strong chlorite/sericite altered basement volcanics at 847m followed by a thick zone of "classic" IOCGU-style mineralised hematite breccia between 1065m and the bottom of the hole at 1227.8m. This interval of 162m averaged 0.25% Cu, 0.07g/t Au, 2.4g/t Ag and 0.04kg/t U<sub>3</sub>O<sub>8</sub>. VUD 8 intersected 180m mineralization zone, including 21m of 0.63% Cu, 0.28g/t Au and 0.17 kg/t U<sub>3</sub>O<sub>8</sub> from 910m within a thicker lower grade copper zone. Hole VUD 3 included 7.8m down hole at 1.21% Cu, (and 0.35g/t Au) (Figure 6). This 7.8m zone is included within a much thicker interval of 56.65m at 0.59% Cu, which also included a number of other higher grade zones such as 0.75m at 4.44% Cu, 1.34g/t Au, 0.58kg/t U<sub>3</sub>O<sub>8</sub> and 0.65m at 7.82% Cu, 2.41g/t Au and 0.03kg/t U<sub>3</sub>O<sub>8</sub> (Website publication, Tasman Resources Ltd, 2012).

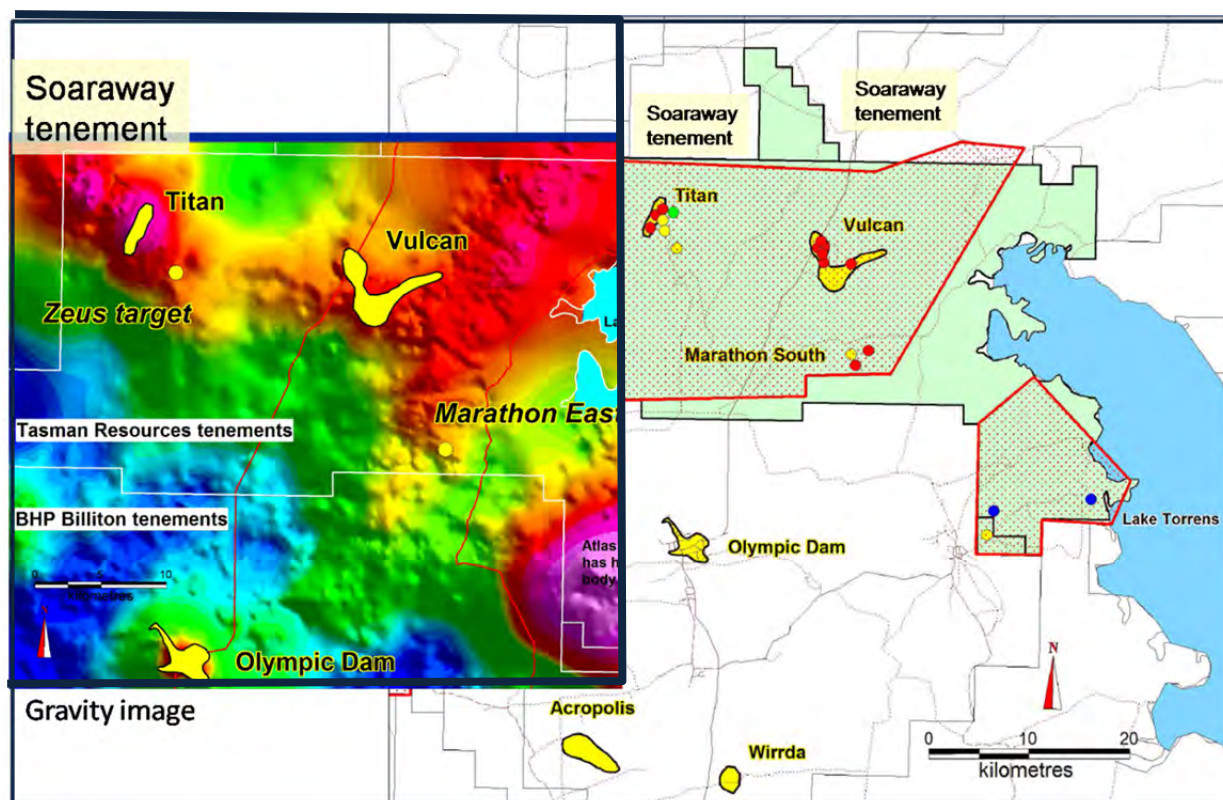


Figure 5. Index map shows the Vulcan and Titan Prospects. Inserted image shows the gravity with Tasman tenements and mineralisation.

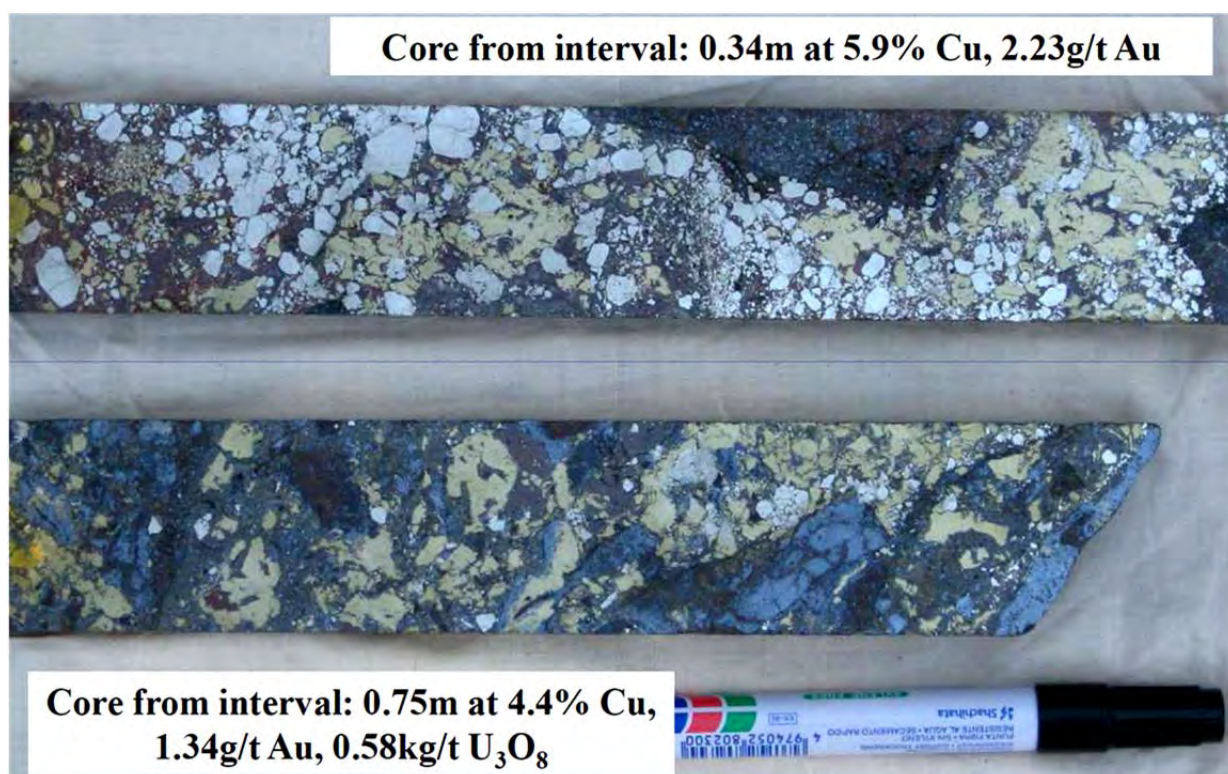


Figure 6. Vulcan VUD 003: Cu - Au - U<sub>3</sub>O<sub>8</sub> mineralisation

In Late 2011, Tasman announced the signing of a conditional Joint Venture agreement covering the EL which contains Vulcan, with Rio Tinto Exploration.

Local mineralisation targets are mainly based on the geophysical features, mostly gravity data. A new gravity data acquisition or in-fills in the southern EL4765 is necessary for further detailed study, since both Vulcan and Titan Prospects are responded with gravity interpretations.

#### 4. Geophysical features

Aeromagnetic and gravity data are well collected in South Australia. Aeromagnetic anomalies, with either coincident or unrelated gravity anomalies, are common targets for exploration in the Olympic Dam region (Figure 7). All geophysical anomalies targeted can be explained directly or indirectly by the results of drilling and subsequent geophysical modelling. The thickness and physical properties of post-Neoproterozoic cover precluded the effective use of surface electrical or thermal methods in definition of drilling targets, although various methods were trialled. Existing geophysical data in within EL4765 are generally poor-quality TMI (Figure 8) and gravity (more than 1 km spacing, Figure 9) data.

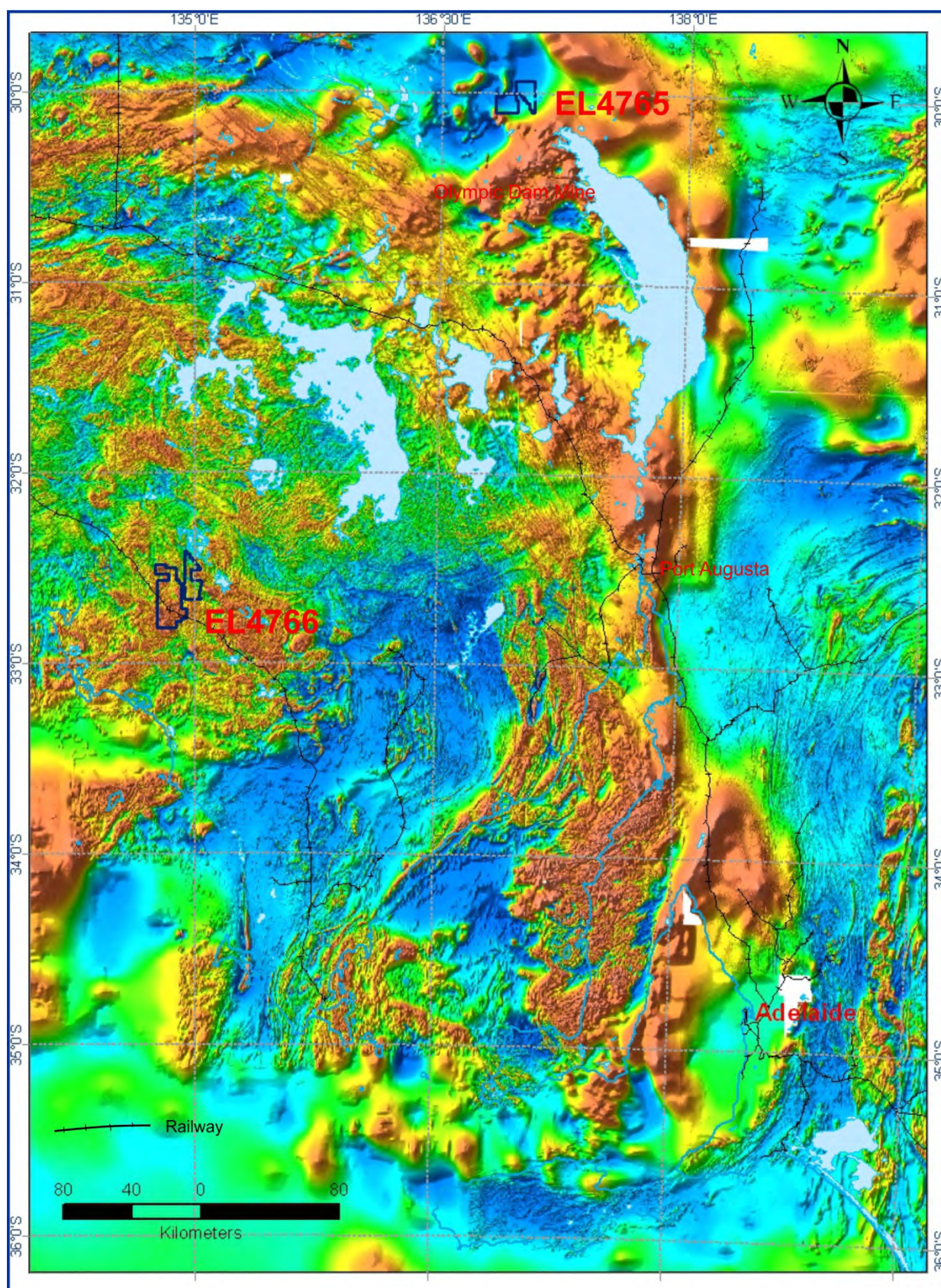


Figure 7. Regional aeromagnetics image (SARIG website downloads).

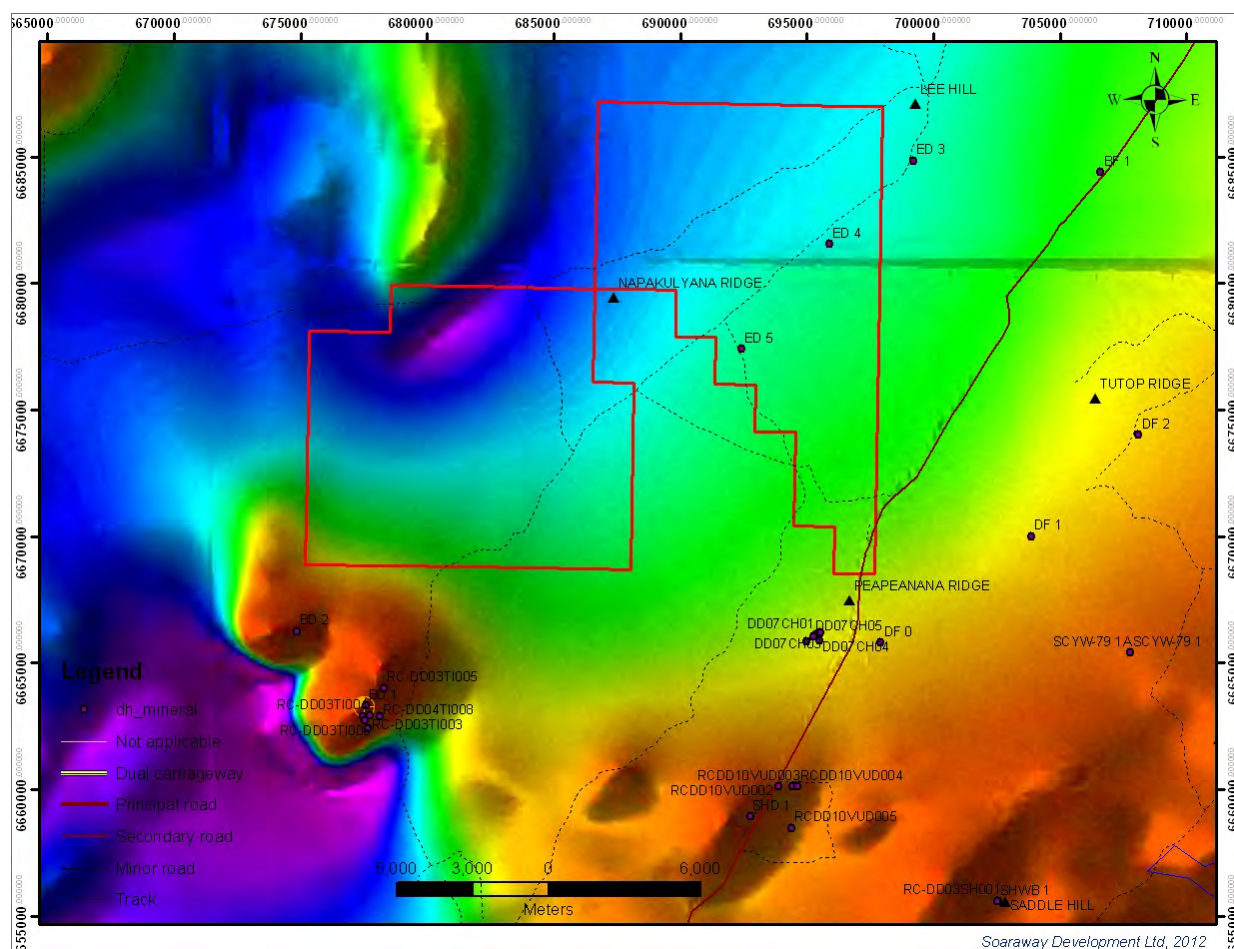


Figure 8. Aeromagnetics image of EL4765 area (SARIG website downloads).

Updated geophysical data, mainly aeromagnetics and gravity, were downloaded from SARIG website, DMITRE. Both aeromagnetic and gravity data show average values and no major anomalies were found in EL4765 (Figure 5). However, gravity data indicate that there are several minor highs in the SW portion of the tenement and the gravity survey stations are more than 1 km spacing. This encourages a further exploration, probably in-fills upgrade the area up to 200m spacing.

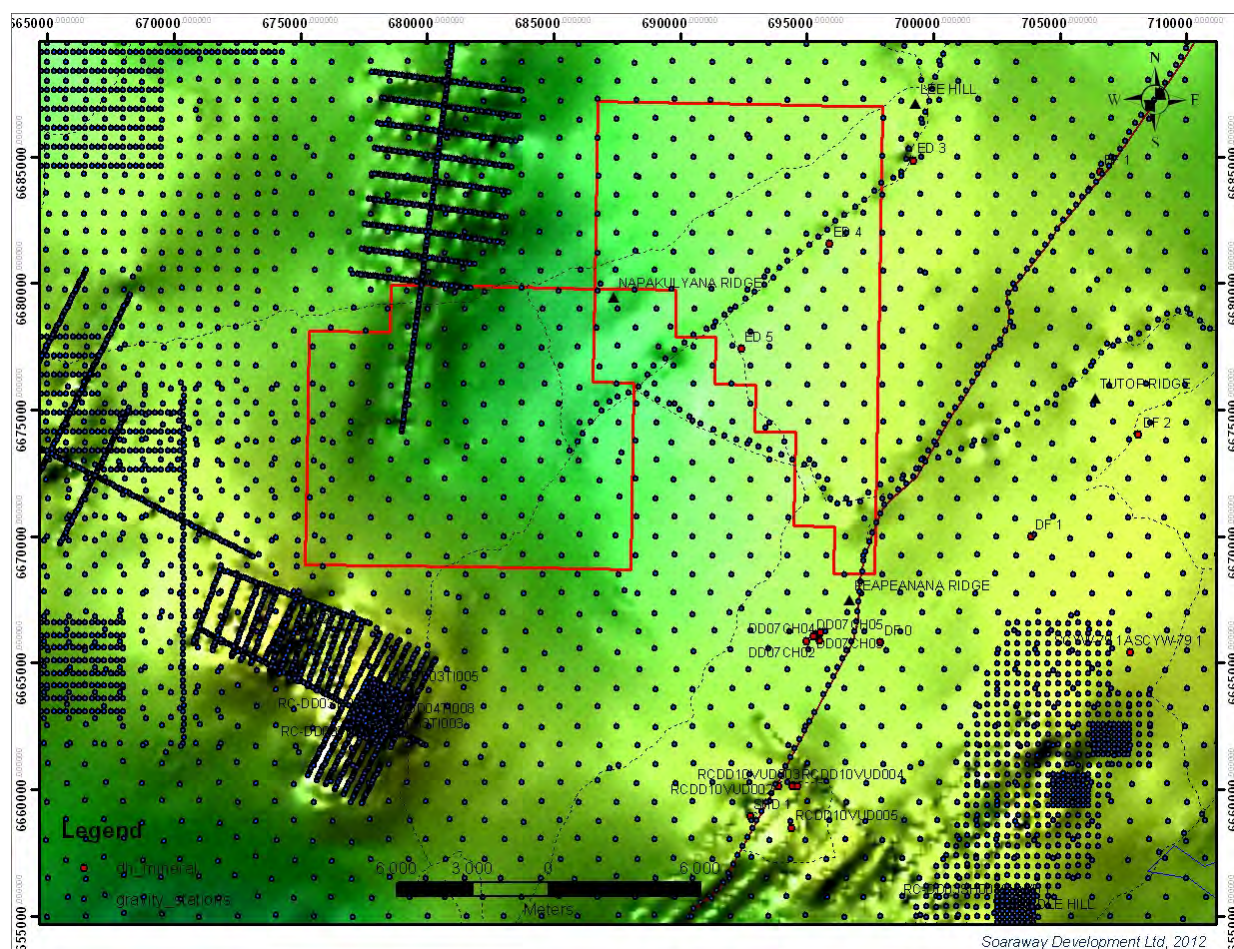


Figure 9. Regional gravity image with survey stations (SARIG website downloads).

## 5. Geology

The Olympic Dam Domain is underlain by complex basement geology consisting of Palaeo- to Mesoproterozoic deformed and metamorphosed sediments and volcanics, various ortho- and paragneisses, mafic to granitic intrusives, including Hutchison Group and Wallaroo Group or equivalents, to Early Mesoproterozoic Hiltaba granite/Gawler Ranges Volcanics. Basement complex faulting and fracturing is also typical, and the basement is overlain by relatively undeformed Gawler Range Volcanics/Hiltaba granites dated at ~1590 Ma. All basement rocks are deeply buried in the area. On the southeastern Gawler Craton, Mesoproterozoic Pandurra Formation (~1440 Ma) unconformably overlies the granites and volcanics.

No Pandurra Formation is known in the tenement area, but was intersected in the Zeus Target at 621m (TD. 797.8m) by hole RC-DD04TI008. The middle-late Neoproterozoic sequence contains mainly the red-brown siltstone of the Brachina Formation or equivalents. Cambrian rocks are dolomitic carbonates. Neoproterozoic-Cambrian sediments in the region can be up to 900m in the area, and deepens east-wards (Figure 10).

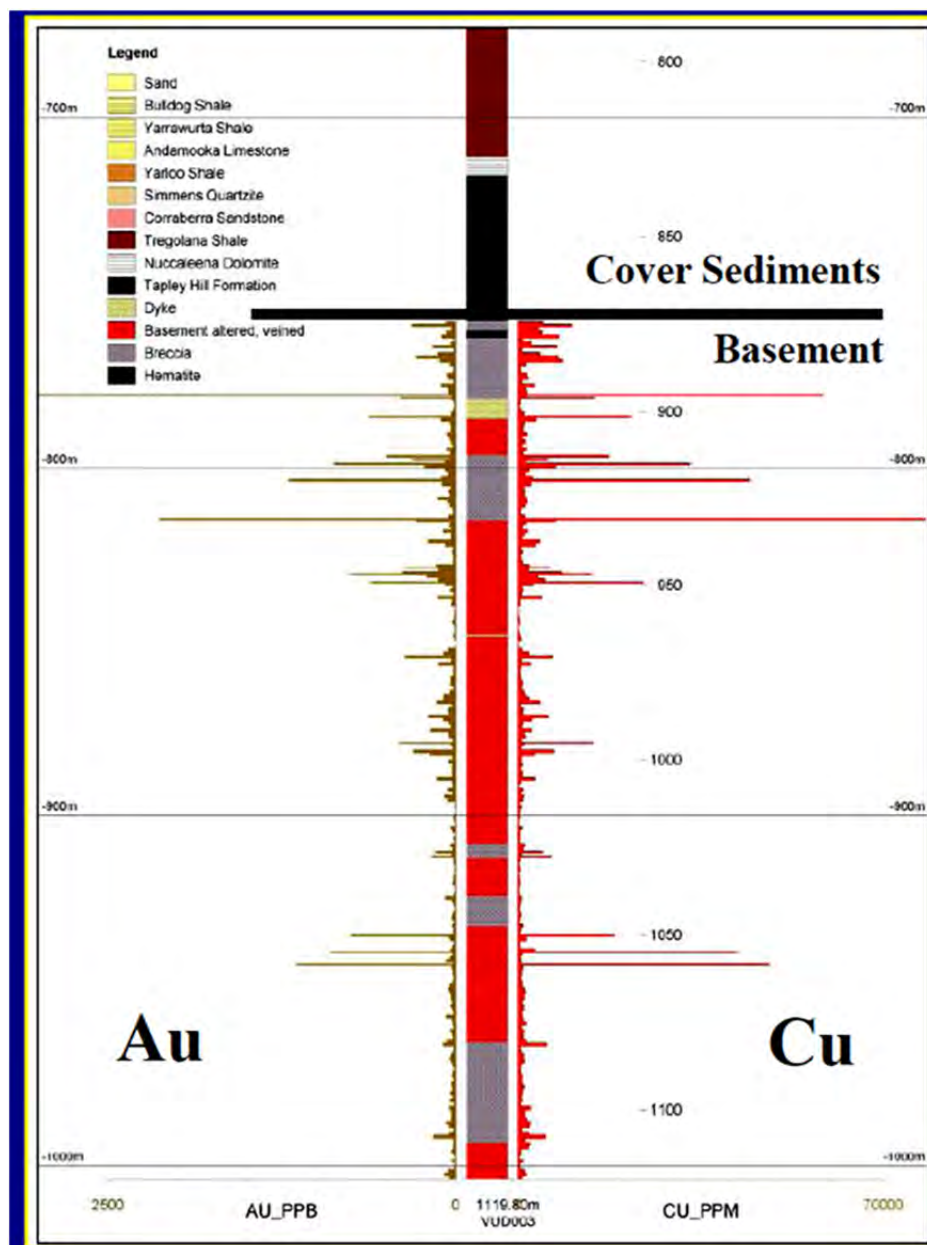


Figure 10. Drilling section of Vul003, showing typical basement geology and mineralisation.

Mesozoic sediments in the area including basal silty sandstone and mudstone of the Bulldog Shale, which is exposed on the surface. Most of the proposed area is covered by Quaternary soil and sands (Figure 11; Photo 2).

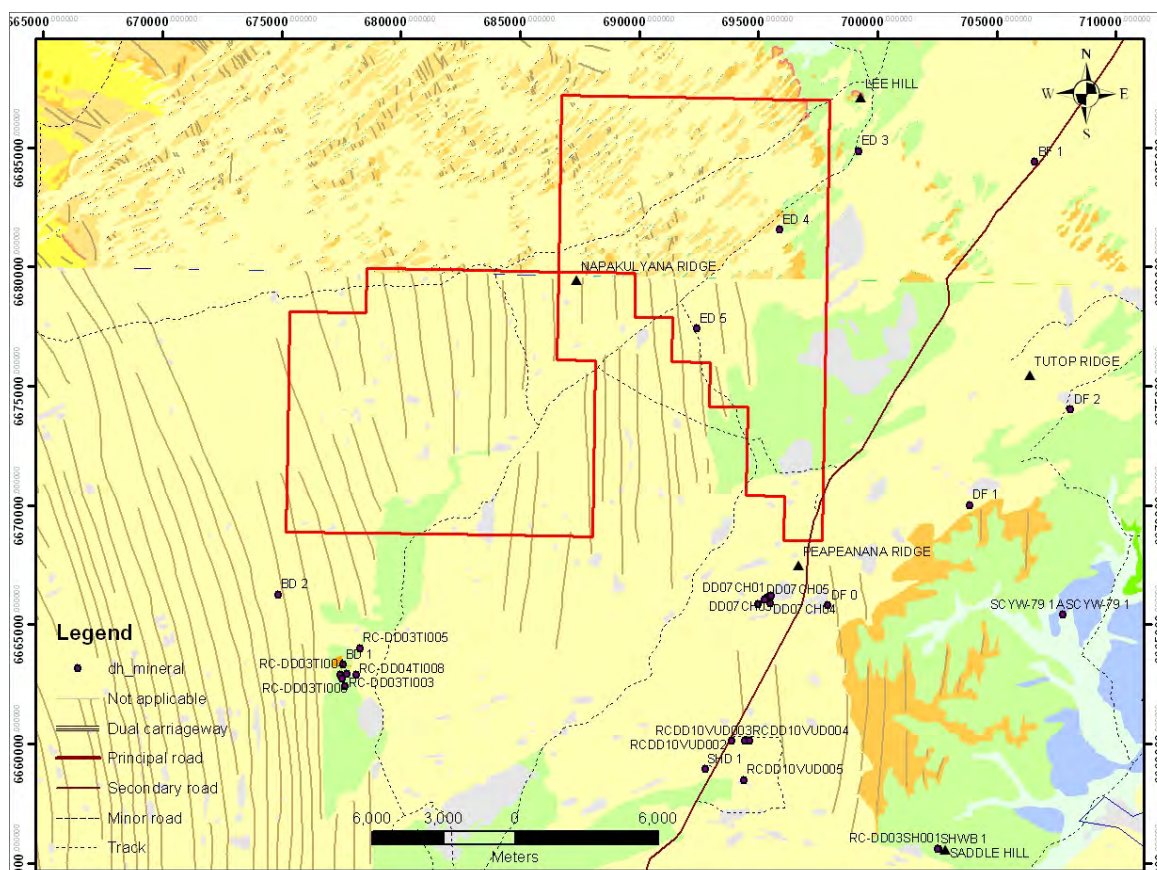


Figure 11. Geological map in the EL4765 area.



Photo 2. Photography shows the ground with gravels and pebbles.

Hole BD 2 (Titan Prospect), 2.6km south of EL4765, intersected crystalline basement rocks of foliated amphibolite, metasediments/metavolcanics and mafic volcanics at 657.4-829.4m. Hole BD 1 (Zeus Prospect) intersected crystalline basement rocks at 607.6m and bottomed at 941m in med.-coarse grained arkose with magnetite, quartz and chlorite alteration, porphyritic felsic dyke. To the southeast, Vulcan Prospect, hole SHD 1 penetrated Fine grained granitic gneiss, leucocratic pegmatitic granite, biotite schist, breccia at top 829.6m (TD.965m). Hole VUD003 intersected the crystalline basement rocks at ~870m. The basement rocks in the EL4765 area are estimated in the depth interval between 600m -1000m.

Two shallow holes were drilled in the tenement. ED4 penetrated Mesozoic sediments at depth 46m and was bottomed at 50m in Neoproterozoic sediments (Figure 12). ED5 intersected 19m Mesozoic sediments and was bottomed at 40m also in Neoproterozoic sediments. No drill holes are known to penetrated the Mesoproterozoic basement rocks in the EL4765 area.

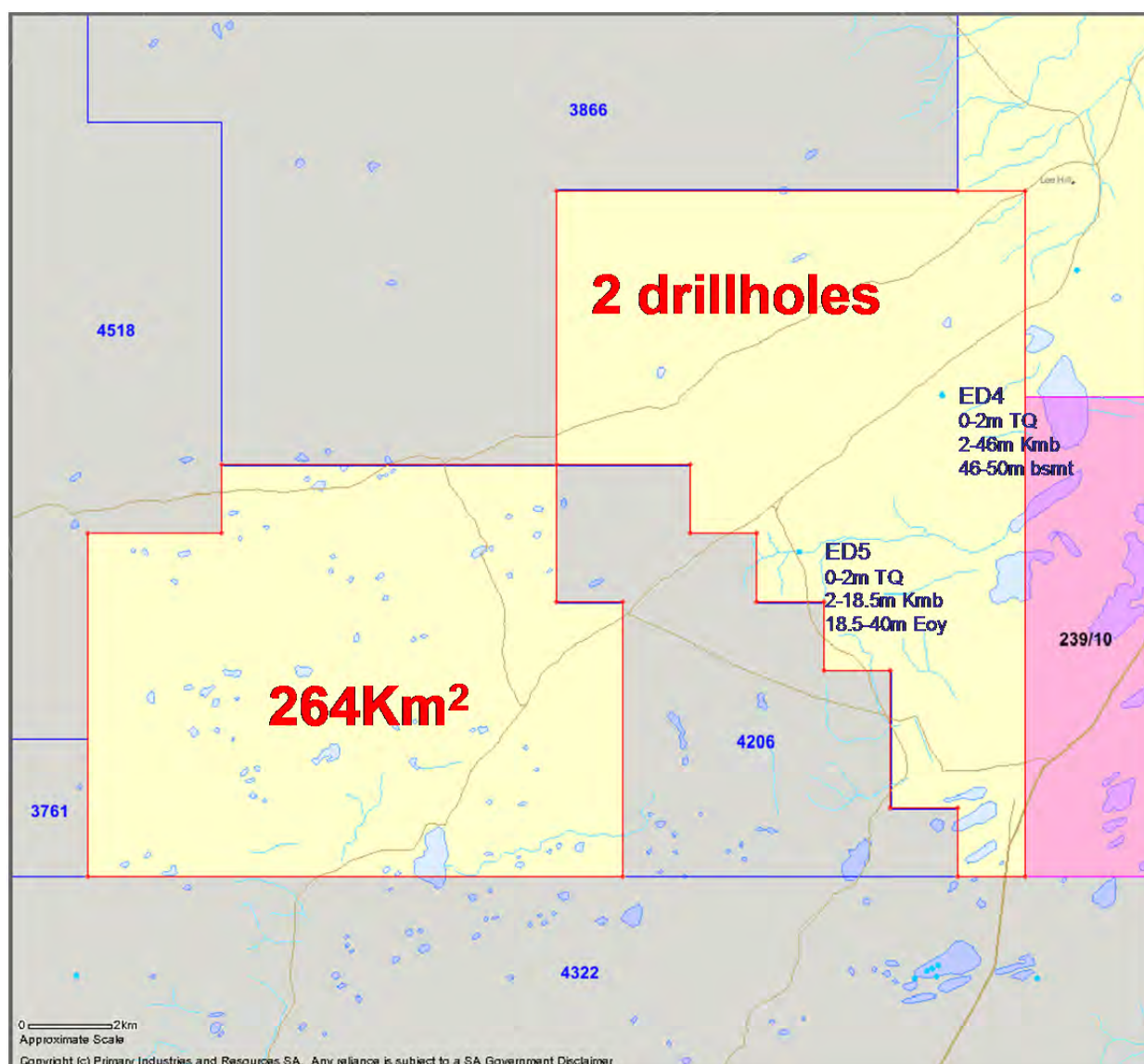


Figure 12. Index map shows the location of 2 holes and stratigraphy (SARIG map).

## 6. Proposal - Gravity survey (in-fills) & cost

Geophysical data, including aeromagnetics and gravity, can be downloaded from DMETRE SARIG website, which have been well studied. In the northern Gawler Craton, because of deep burial of the mineralisation, the gravity is commonly regarded as prime geophysical tool to detect a mineralisation target.

Recent gravity surveys and data compilation in the region were conducted by Atlas Geophysics Pty Ltd (Mathews, 2007), which completed the acquisition of the dataset using helicopter-borne gravity from May 2007 to September 2007. Atlas Geophysics required the acquisition and processing of 37,464 regional gravity stations under a South Australian government sponsored initiative known as PACE, the Plan for Accelerating Exploration. The PACE gravity survey was referred to as the Northern G2 Gravity Survey and was funded by both Primary Industries and Resources of South Australia (PIRSA) and Barrick Gold of Australia. The new data acquired by the Northern G2 survey should enable a new understanding about the geology of the area and allow explorers to directly identify deep drilling targets (Figure 13).

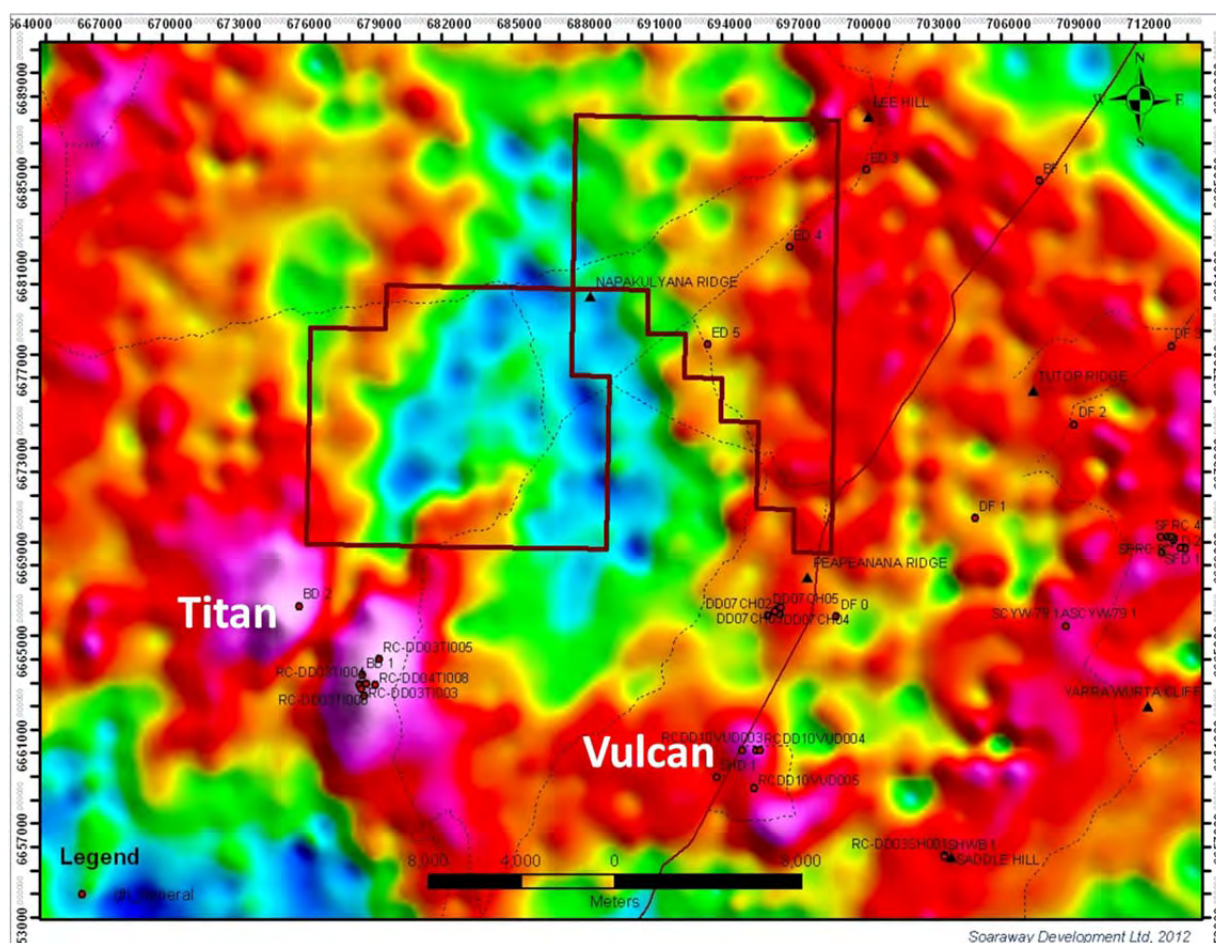


Figure 13. Gravity image produced from Atlas survey (Mathews, 2007).

Gravity acquisition over areas funded by Barrick Gold of Australia was conducted using a 1.5km by 1.5km square grid with 750m offset configuration (Mathews, 2007; Figure 14). A new gravity survey, mainly by in-fills to ~200m X 200m, is proposed for 70Km<sup>2</sup> in the EL4765 area (Figure 15). The purpose of the survey is to find a valid drilling target. The Mesoproterozoic basement depth is estimated ~600-800m in the area.

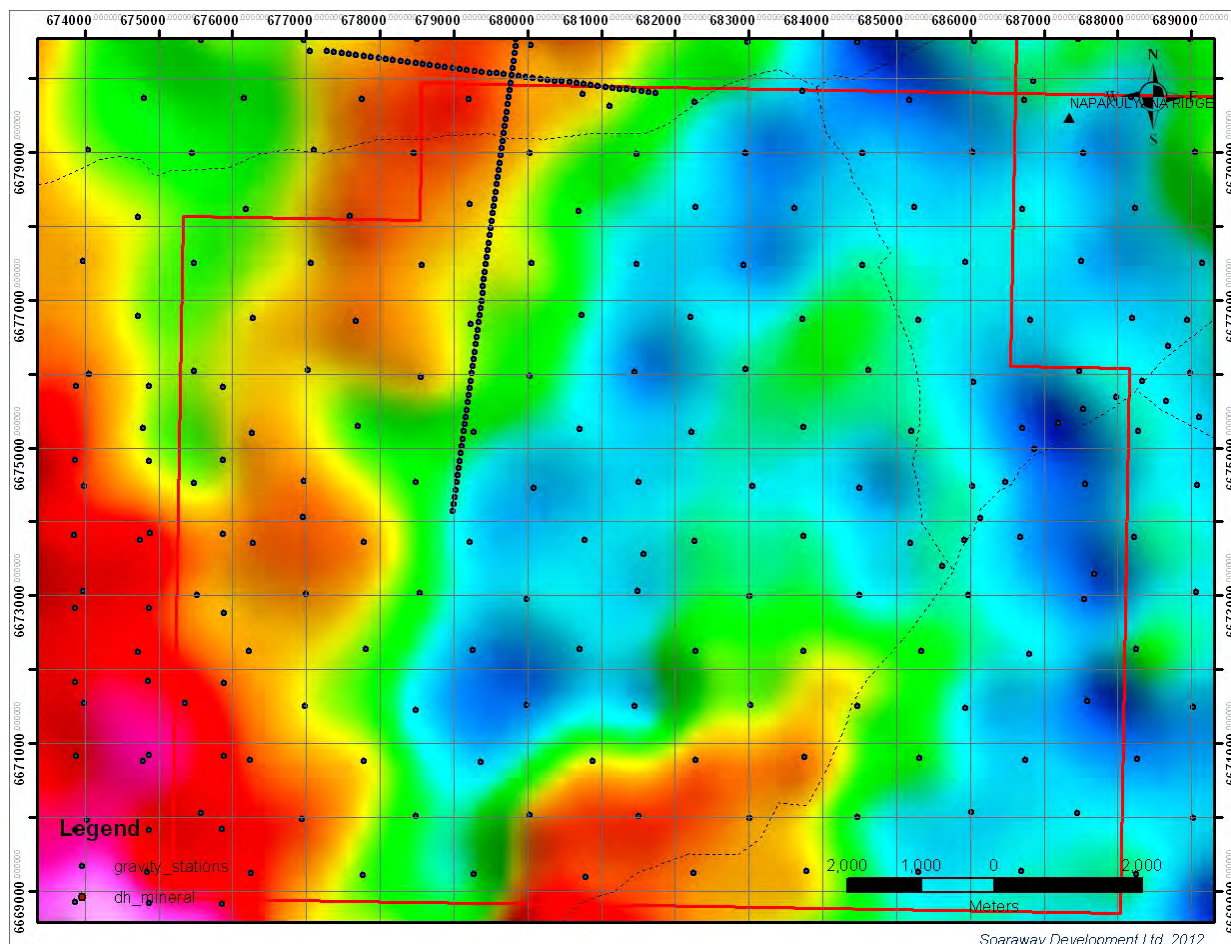


Figure 14. Close-up of the gravity image by Atlas Geophysics survey, showing gravity survey points.

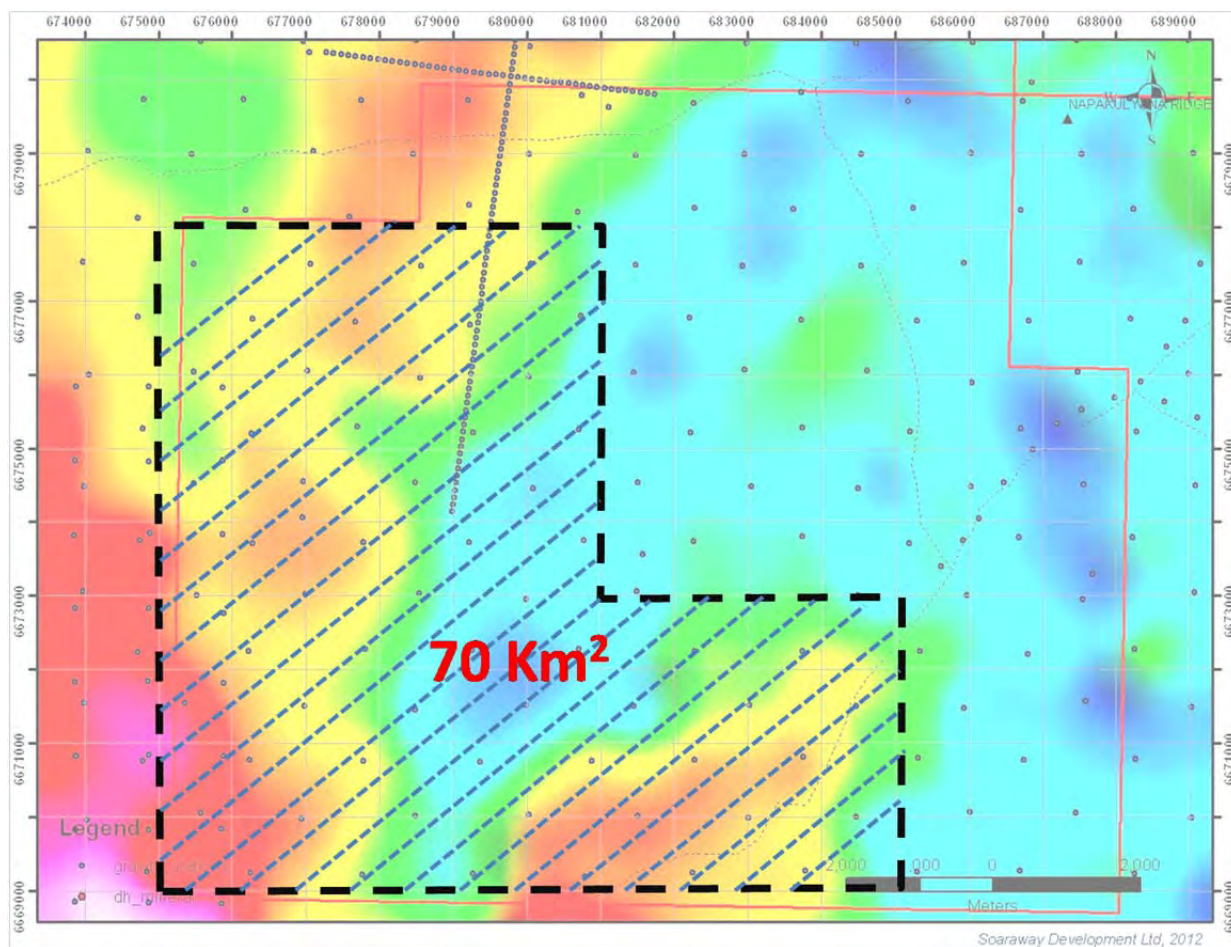


Figure 15. Index figure shows the gravity survey area.

### Estimated Cost of the propose gravity survey

1. The new gravity survey and interpretation will cost ~\$100,000.
2. Drilling a 1500m hole in the area will cost ~\$350,000 and 2 holes ~\$500,000 (cost estimated on the information in September 2012).

## **7. Expenditure Statement**

**- Not included**

## 8. Conclusions

Tenement EL4765 is located in the eastern margin of the Gawler Craton, within the G2 corridor or IOCGU mineralisation belt. The tenement is 40km north of the Olympic Dam Mine and ~2km north of the Vulcan Prospect. The area is prospective for IOCGU mineralisation.

The tenement is mapped by ground surveys and geophysical investigations. A proposal for a ground gravity survey is under the review by the company.

## 9. Selected References

Daly, S. J., Fanning, C. M. and Fairclough, M. C., 1998. Tectonic evolution and exploration potential of the Gawler Craton, South Australia. *AGSO Journal of Australian Geology and Geophysics*, 17, 145-168.

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Parker, A.J. (compiler), 1993. Palaeoproterozoic. In: Drexel, J. F., Preiss, W. V. and Parker, A.J. (eds.), *The geology of South Australia. Vol. I. The Precambrian*. South Australia. Geological Survey, Bulletin, 54:51-105.

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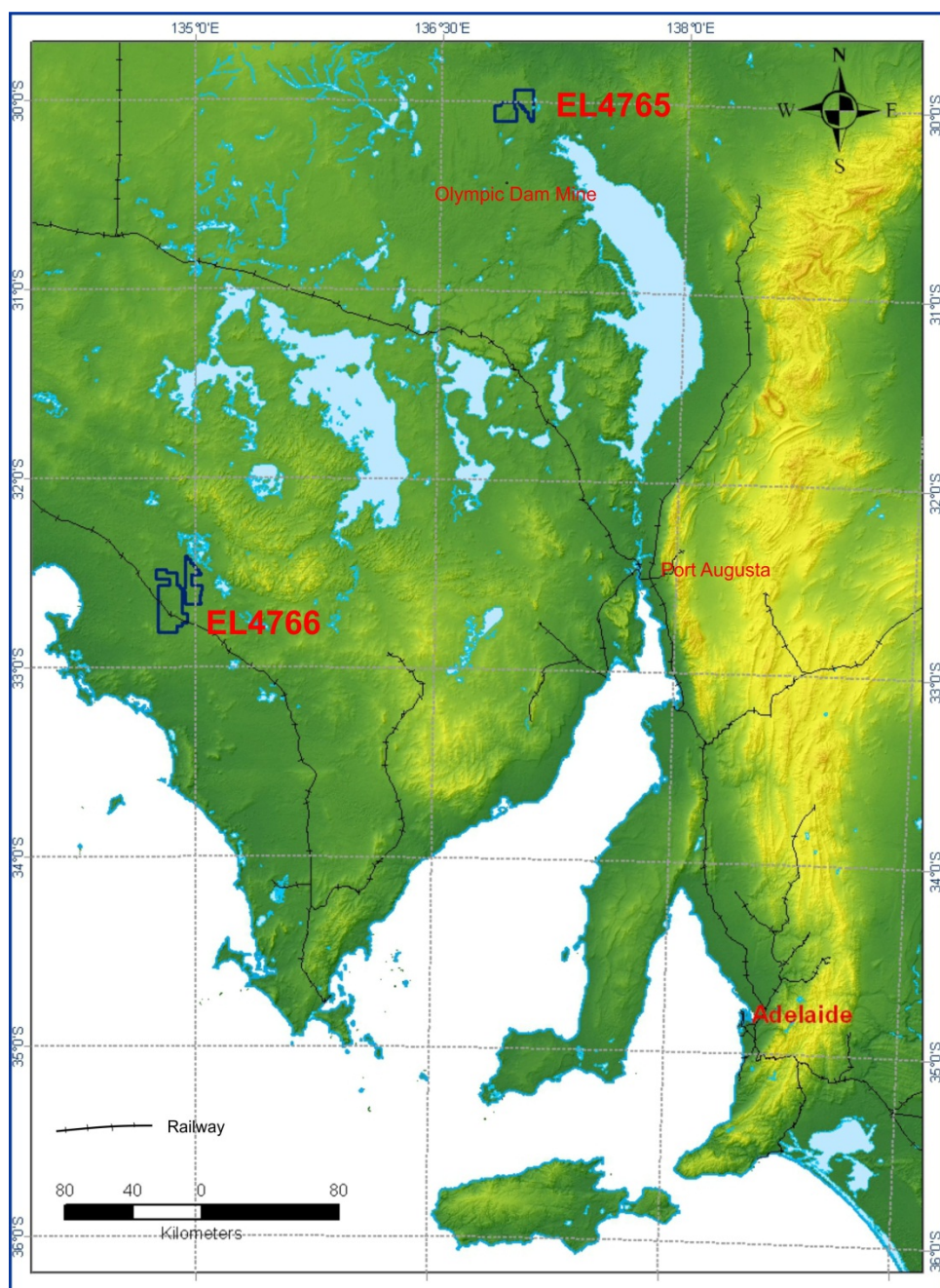


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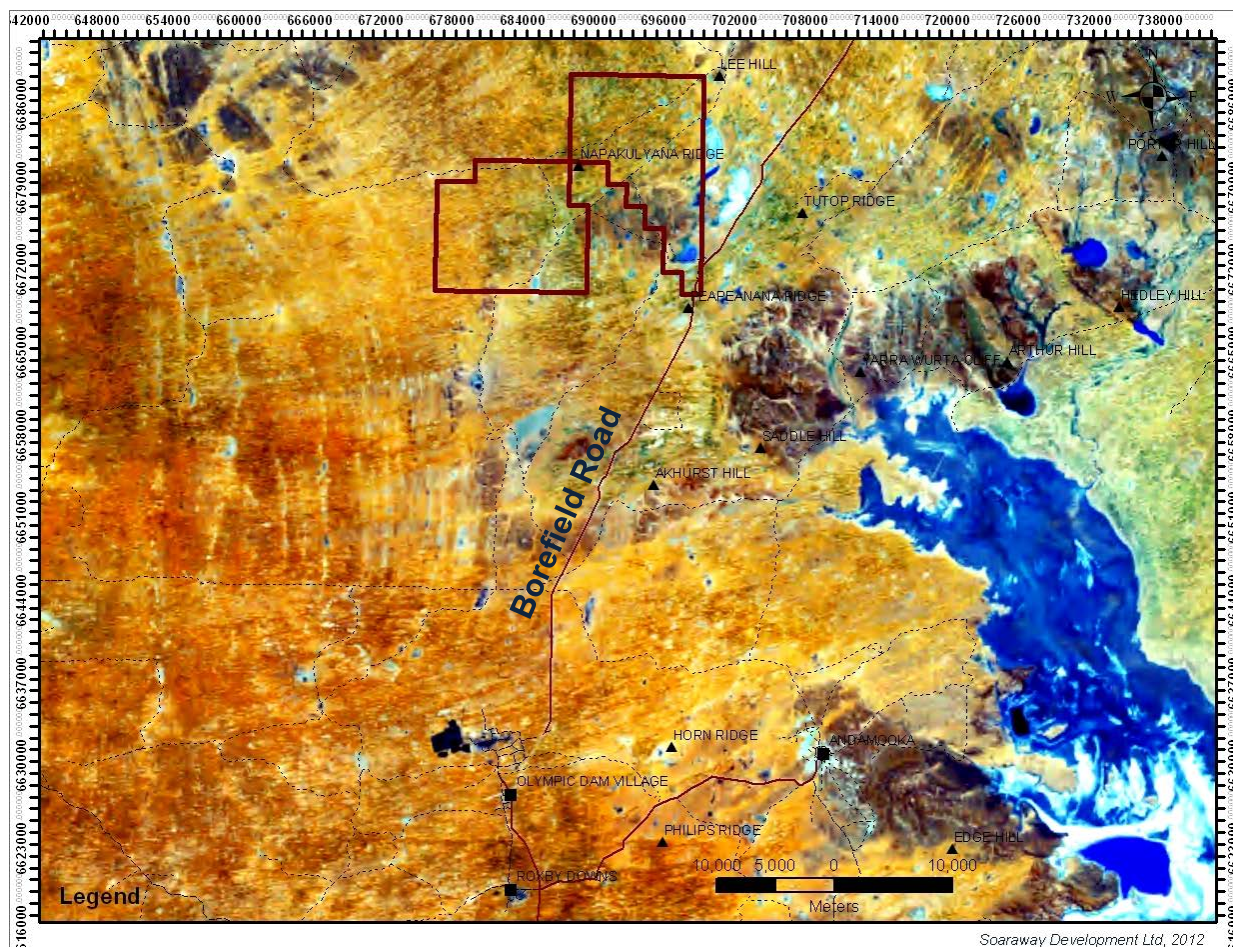


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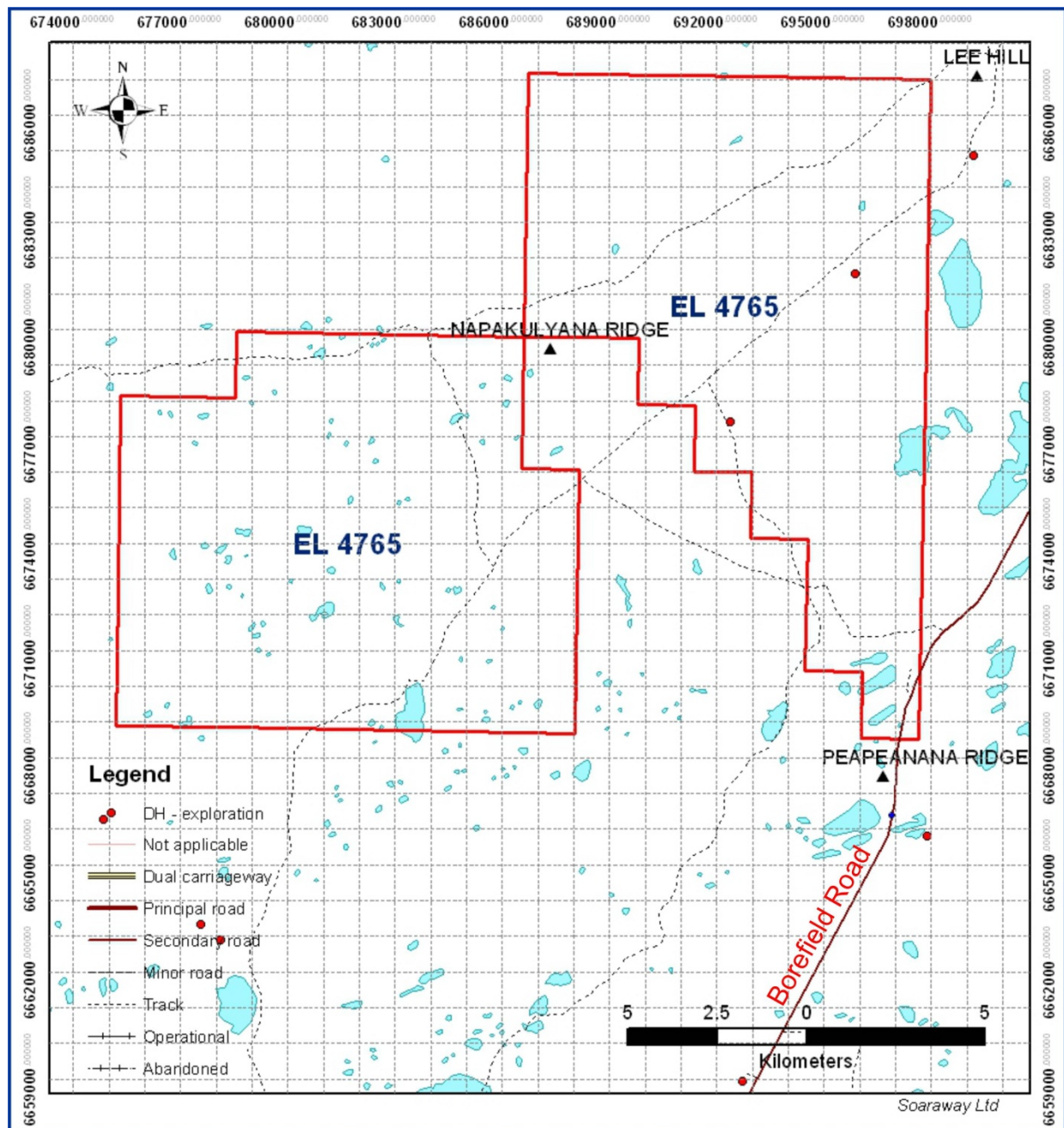


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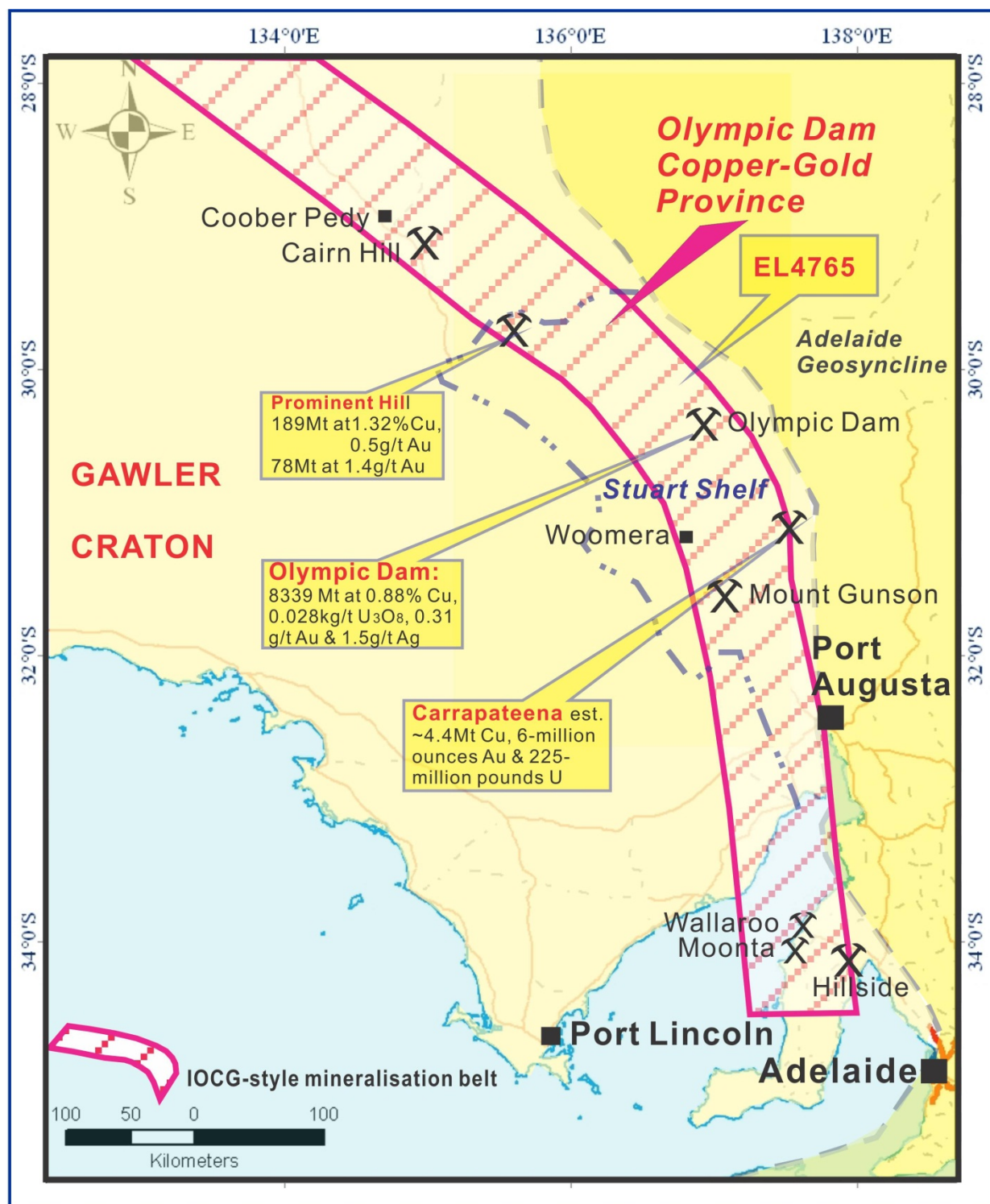


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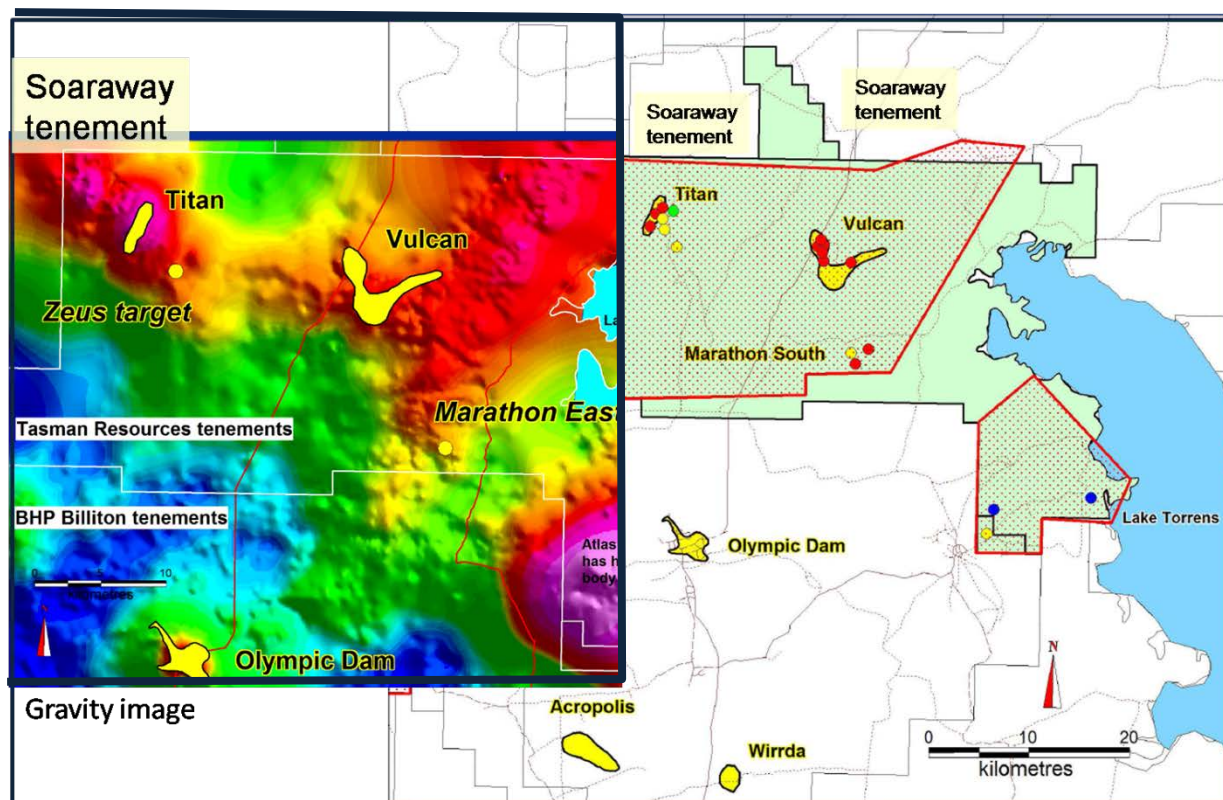


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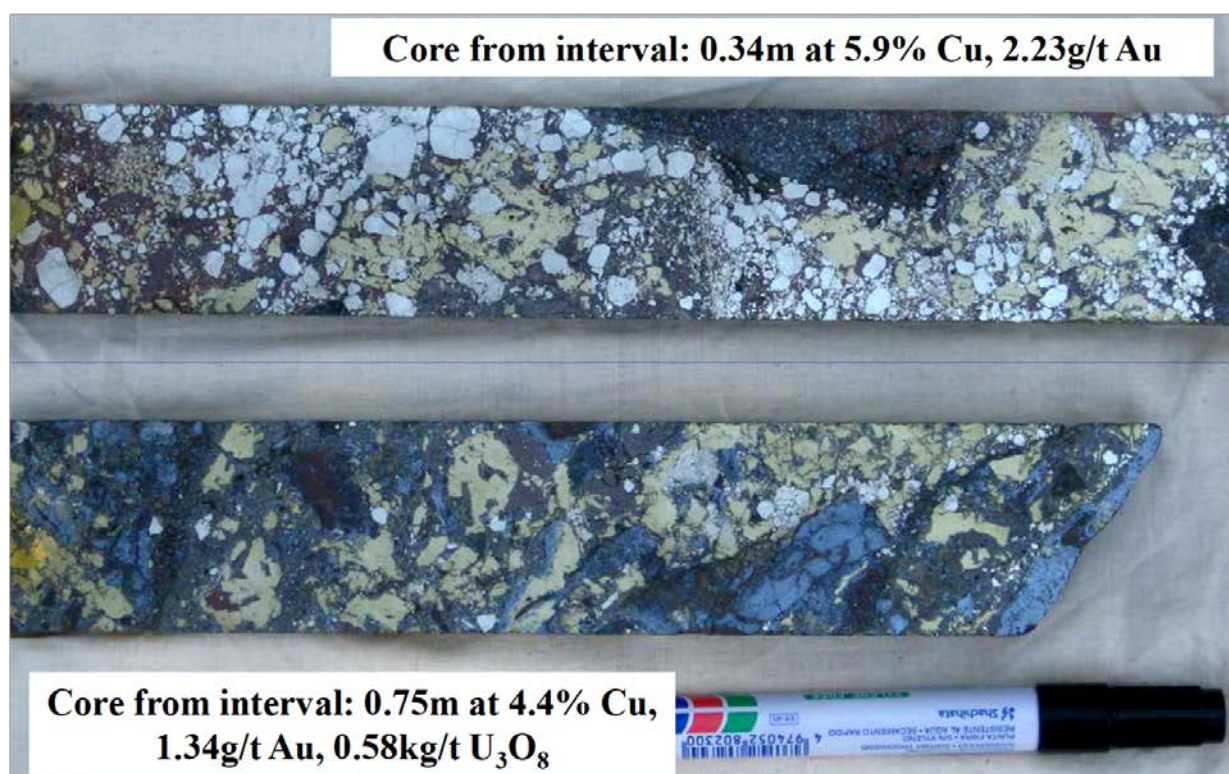


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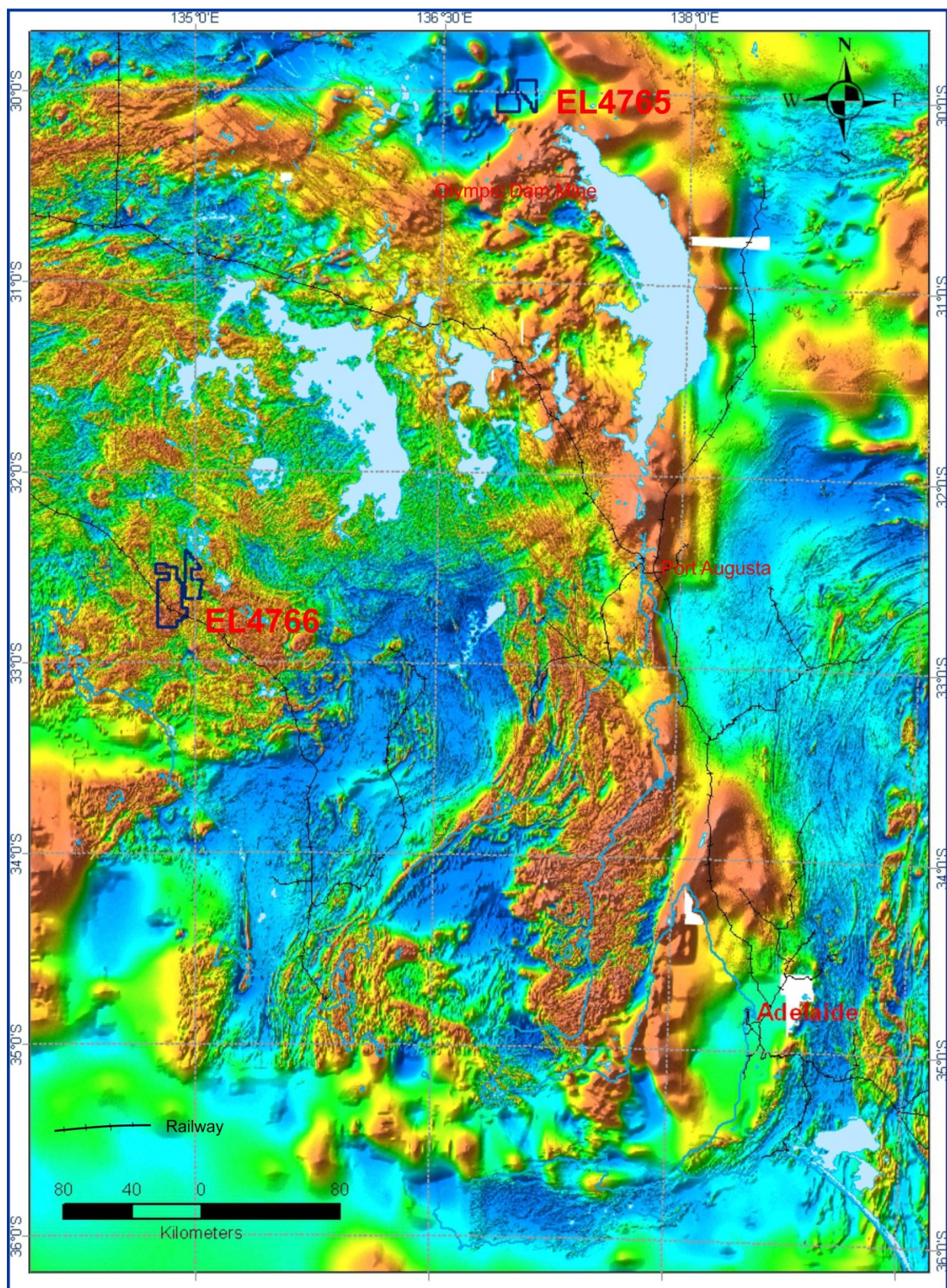


Figure 7. Regional aeromagnetics image (SARIG website downloads).

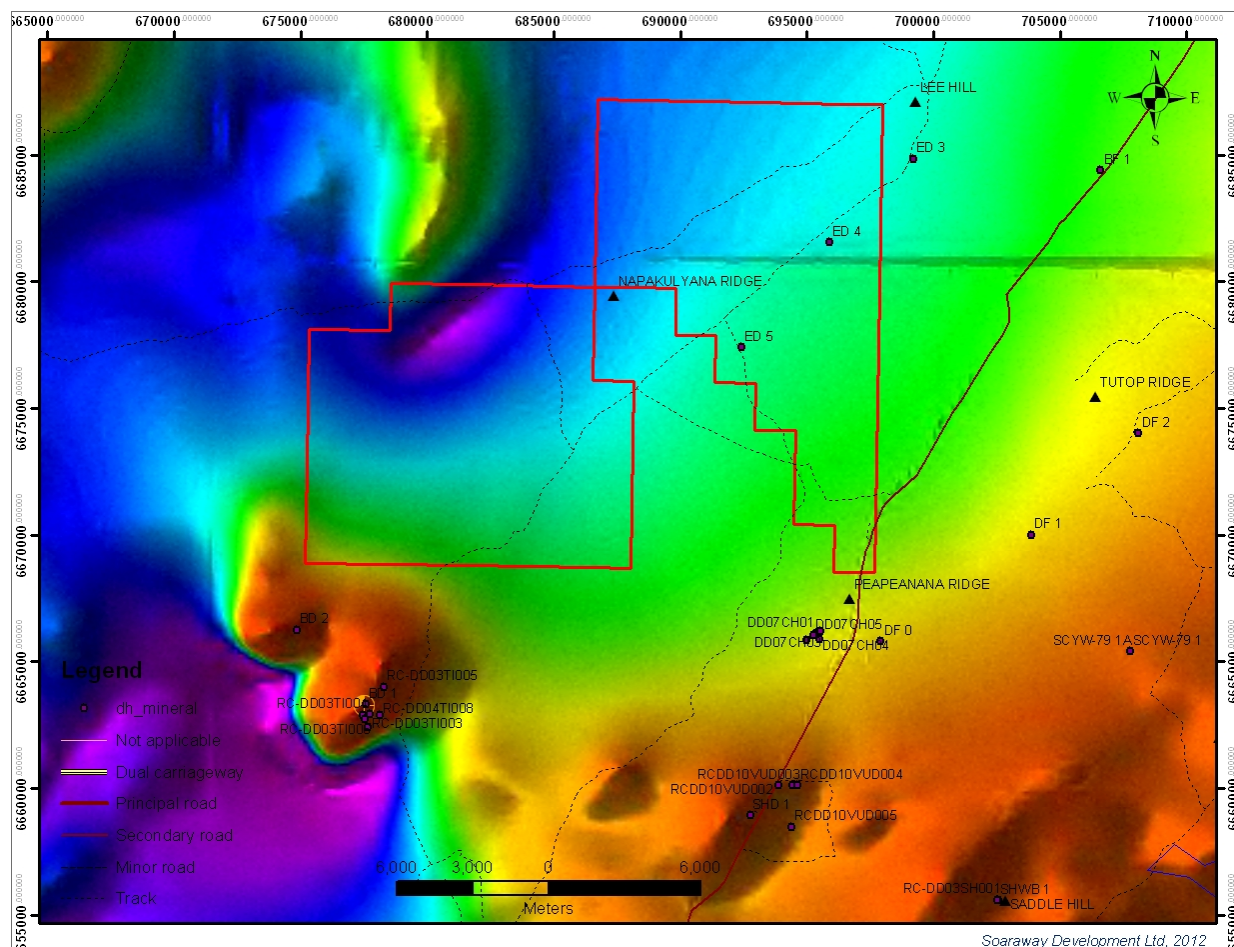


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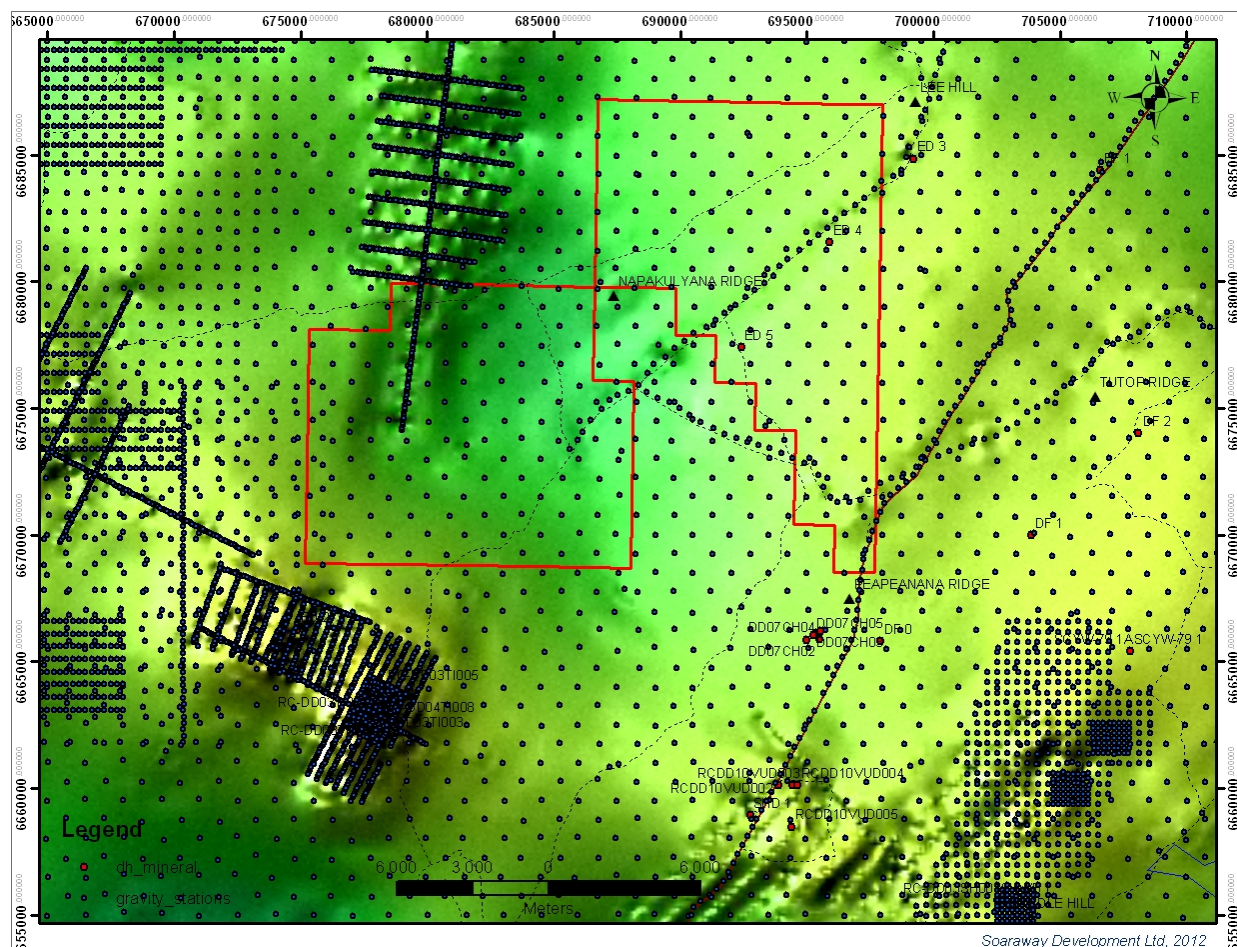


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No Pandurra Formation is known in the tenement area, but was intersected in the Zeus Target at 621m (TD. 797.8m) by hole RC-DD04TI008. The middle-late Neoproterozoic sequence contains mainly the red-brown siltstone of the Brachina Formation or equivalents. Cambrian rocks are dolomitic carbonates. Neoproterozoic-Cambrian sediments in the region can be up to 900m in the area, and deepens east-wards (Figure 10).

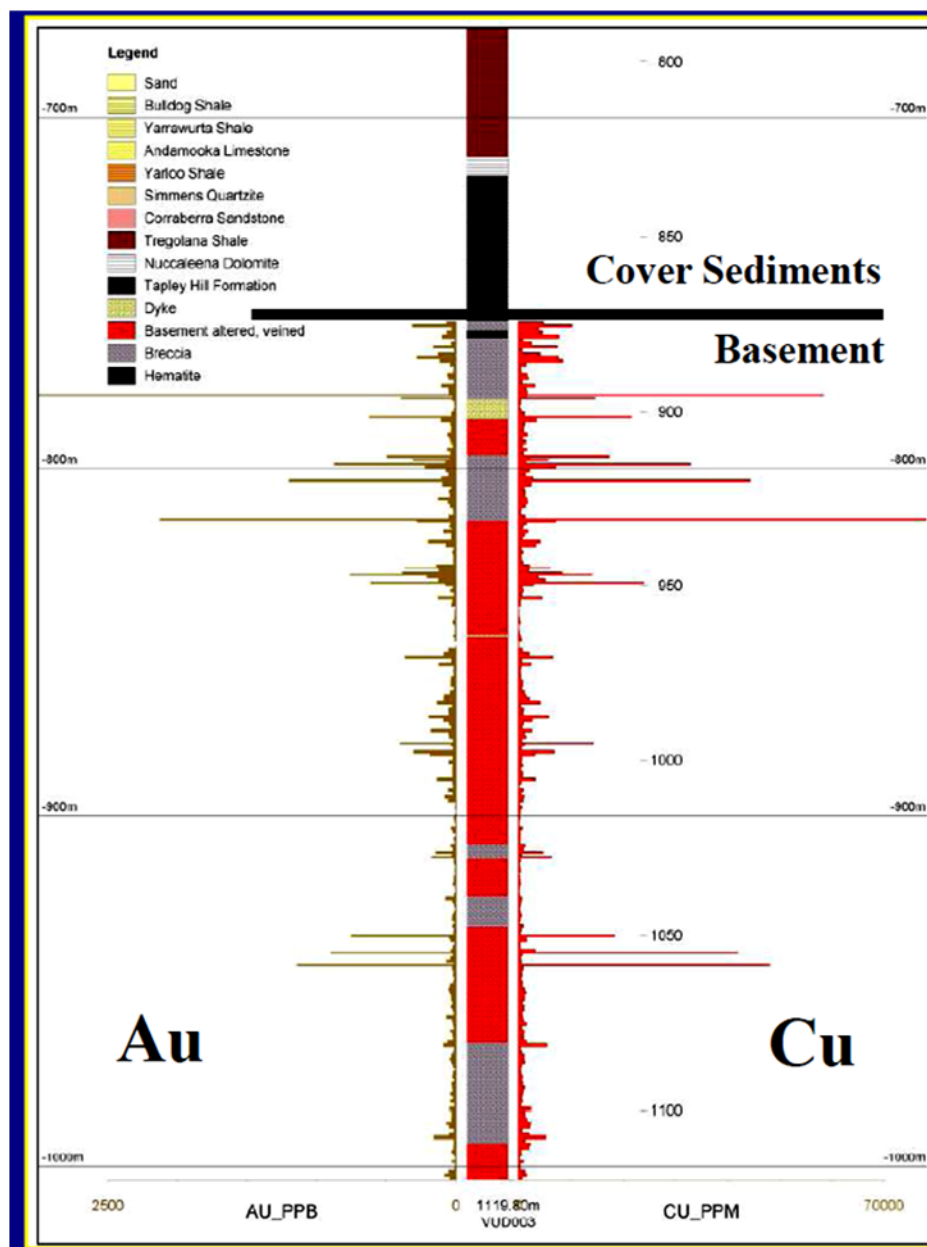


Figure 10. Drilling section of Vul003, showing typical basement geology and mineralisation.

Mesozoic sediments in the area including basal silty sandstone and mudstone of the Bulldog Shale, which is exposed on the surface. Most of the proposed area is covered by Quaternary soil and sands (Figure 11; Photo 2).

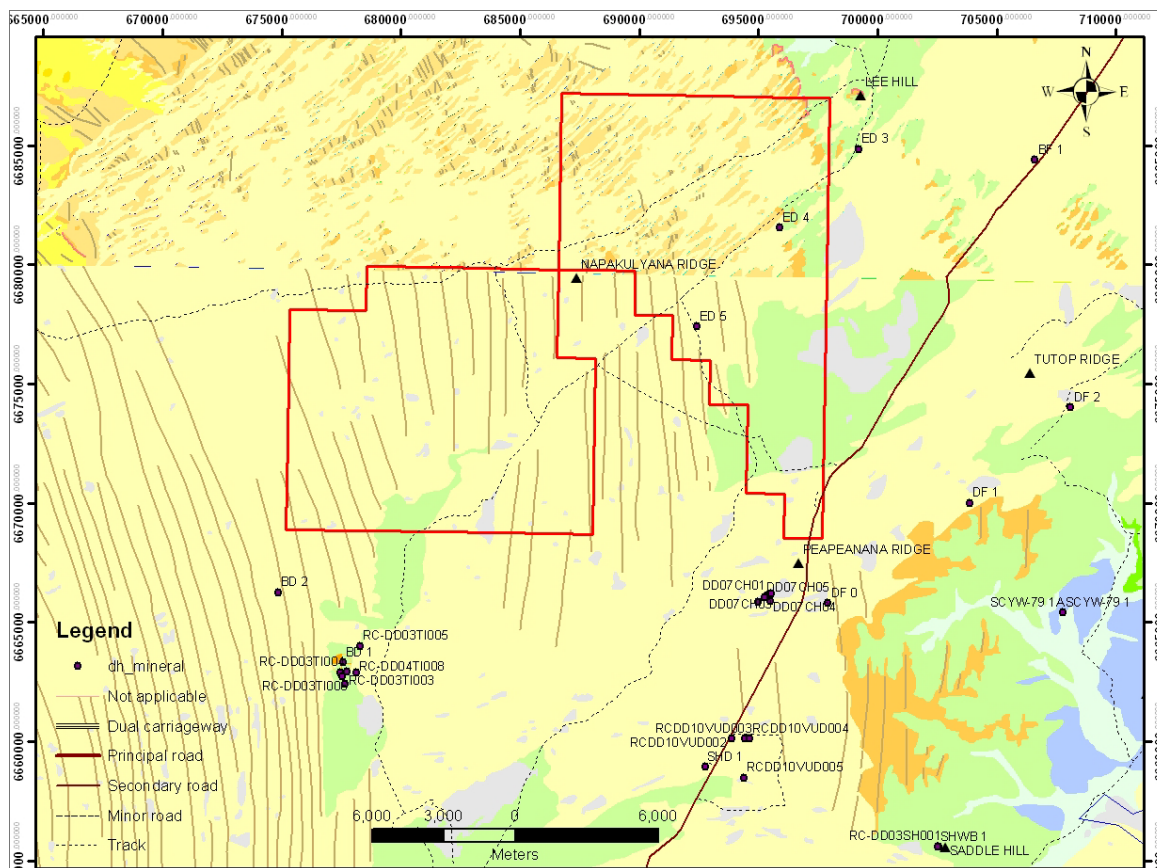


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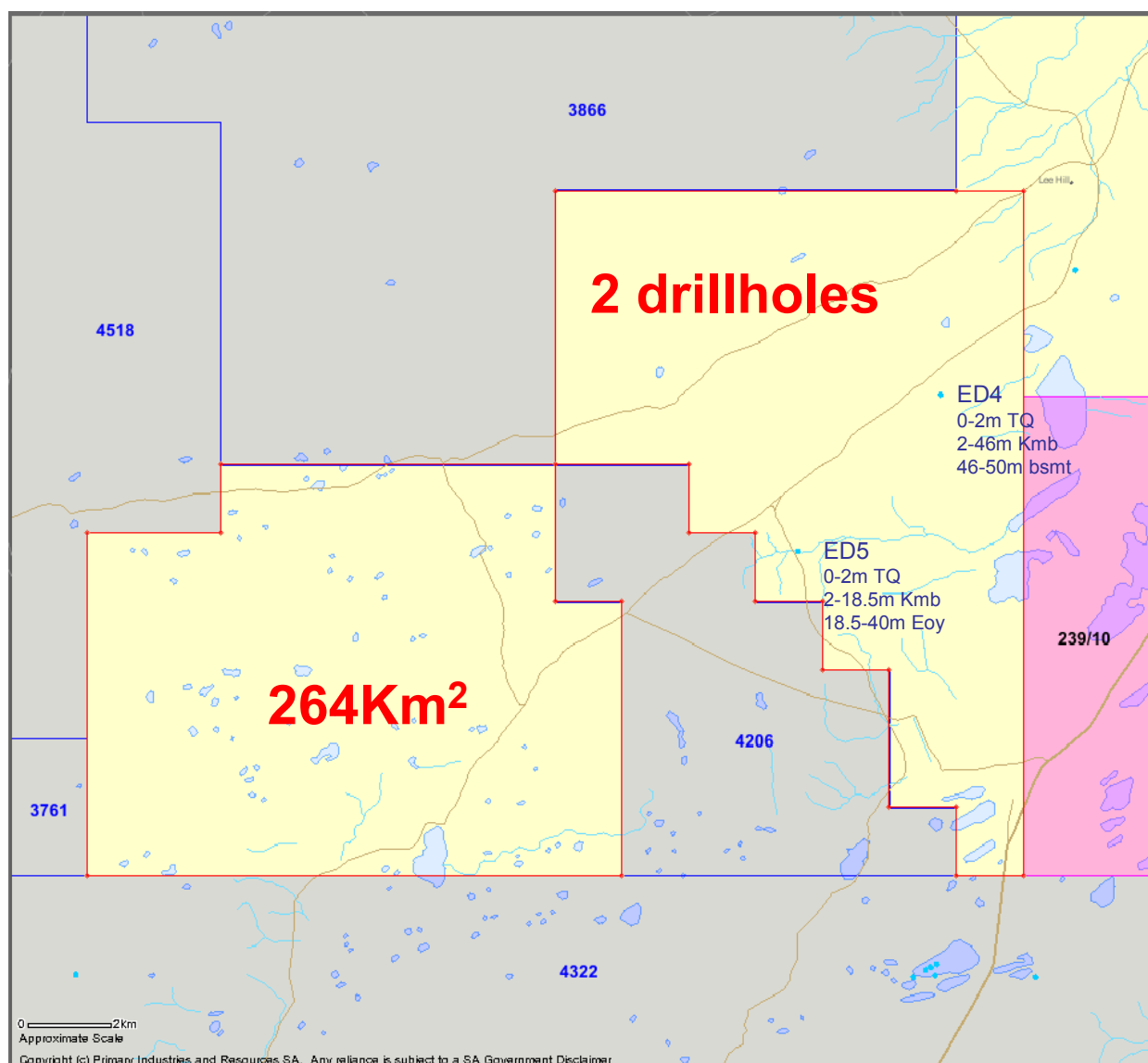


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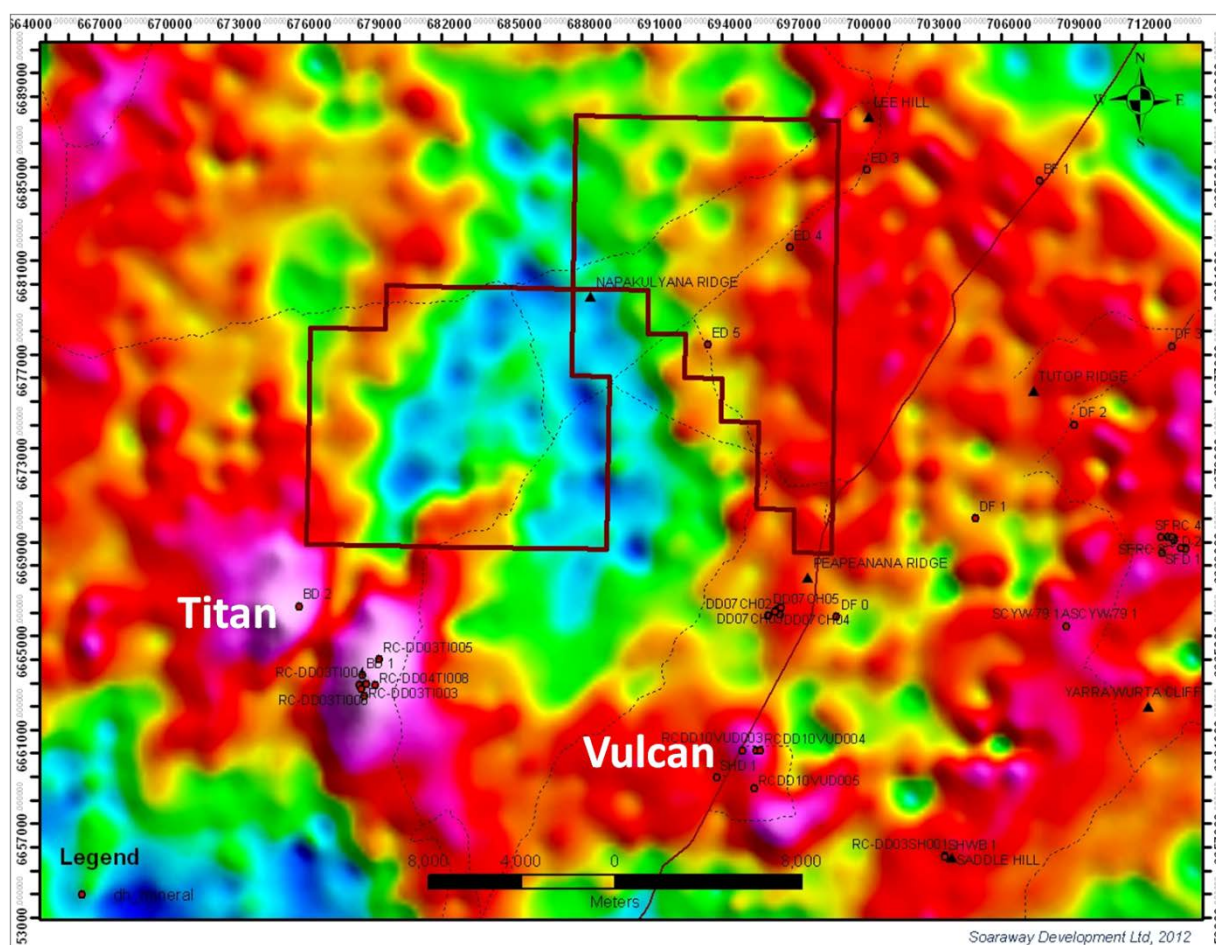


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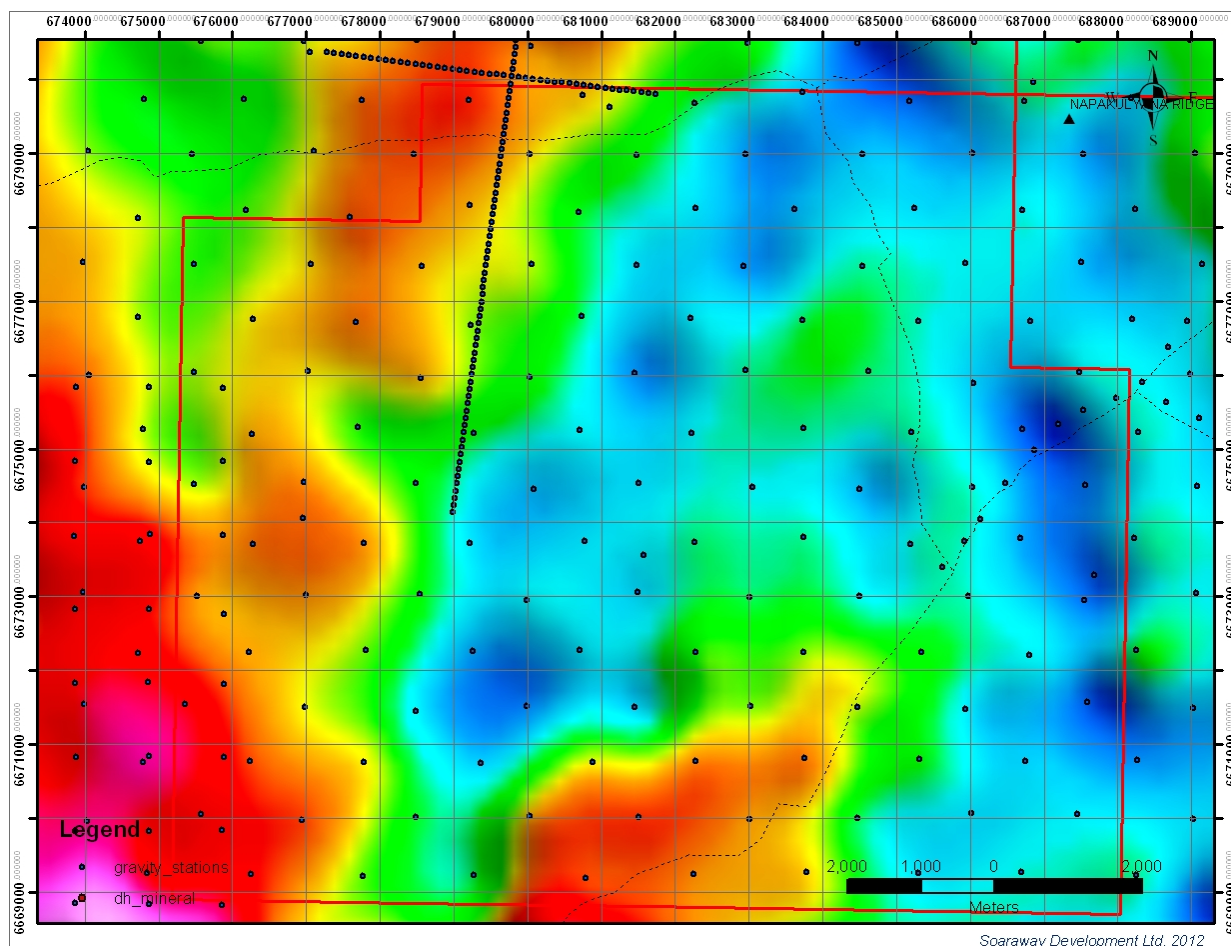


Figure 14. Close-up of the gravity image by Atlas Geophysics survey, showing gravity survey points.

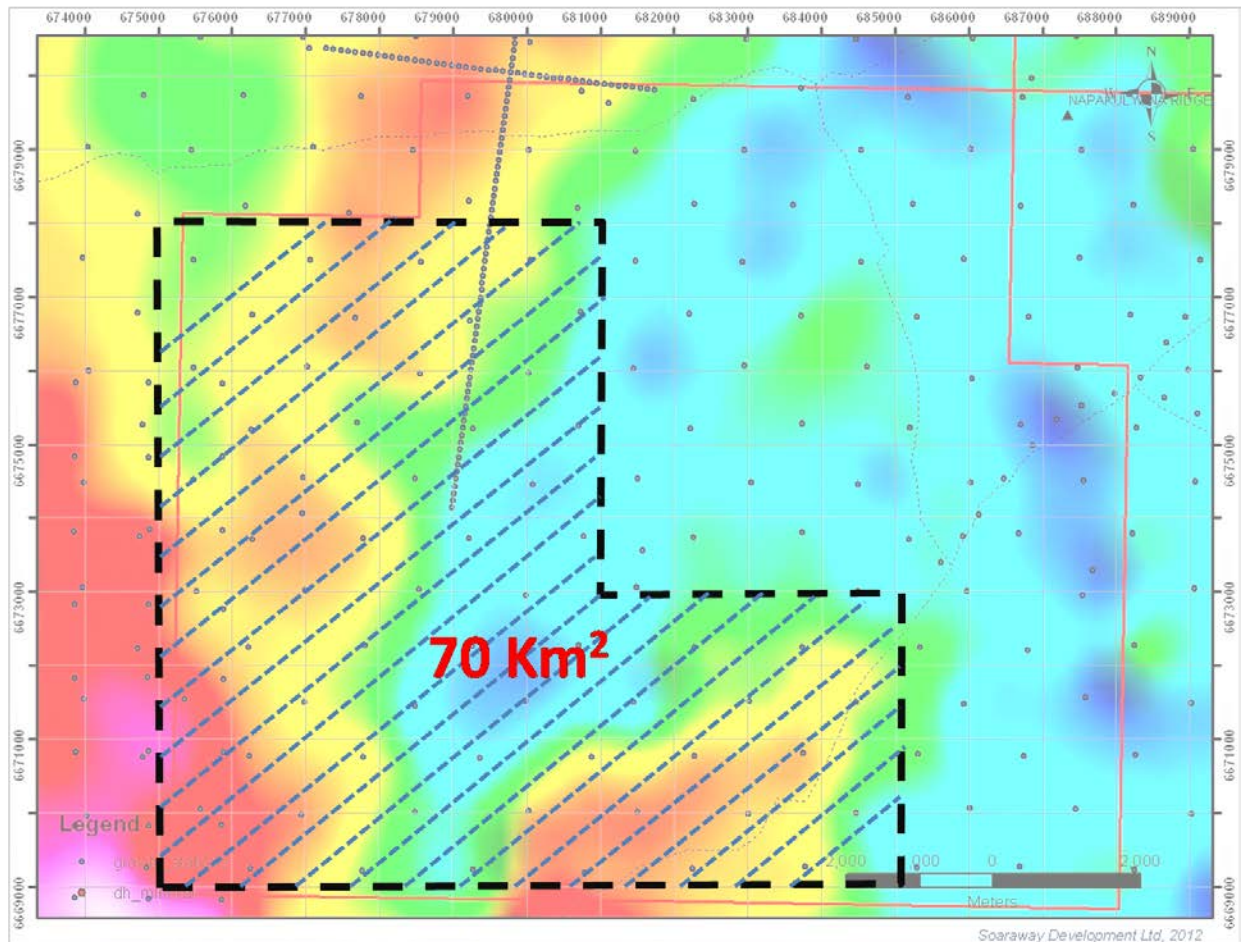


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### Estimated Cost of the propose gravity survey

1. The new gravity survey and interpretation will cost ~\$100,000.
2. Drilling a 1500m hole in the area will cost ~\$350,000 and 2 holes ~\$500,000 (cost estimated on the information in September 2012).

## **7. Expenditure Statement**

**- Not included**

## 8. Conclusions

Tenement EL4765 is located in the eastern margin of the Gawler Craton, within the G2 corridor or IOCGU mineralisation belt. The tenement is 40km north of the Olympic Dam Mine and ~2km north of the Vulcan Prospect. The area is prospective for IOCGU mineralisation.

The tenement is mapped by ground surveys and geophysical investigations. A proposal for a ground gravity survey is under the review by the company.

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**Annual Report**  
**-**  
**EL4765, South Australia**

**For the period of**  
**11 July 2013 – 10 July 2014**

**July 2014**

**Soaraway Development Limited**

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- Table 1. Current status of EL4765

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## Summary Points

- EL4765 was granted for a term of 2 years ends on 10 July 2013
- Tenement is 40km north of Olympic Dam Mine and 5-10km north of Vulcan and Titan Prospects, potential for IOCGU style mineralisation
- Relatively thick Neoproterozoic sediment cover, ~600m-1000m to crystalline basement
- The region has high-resolution aeromagnetics, but poor gravity data (~1.5km X 1.5km)
- Field surveys in the area suggest a gravity survey in the western portion of the tenement.
- A proposal for gravity acquisition (in-fills) and interpretation will cost ~\$100000, for an area ~70km<sup>2</sup>
- A potential 1500m-hole costs ~\$350000

## Keywords

EL4765, Mattaweara 100K, Curdimurka 250K, Andamooka, Olympic Dam, Cu-Au, uranium, gravity, drilling, Early Mesoproterozoic, Hiltaba Suite, Gawler Craton, Vulcan Prospect, Titan Prospect

## 1. Introduction

The tenement EL4765 was granted for a term of 2 years commencing on 11 July 2011. The tenement area, ~570km north of Adelaide and ~40km north of Olympic Dam Mine, contains ~264Km<sup>2</sup> located in the eastern Gawler Craton (Figure 1), and all area is covered by modern sand dunes and gravels (Figure 2). The mineralisation in the area is poorly known and only 2 shallow holes were bottomed in Cambrian-Neoproterozoic sediments. The tenement is well known for potential of IOCGU style mineralisation, but Cambrian-Neoproterozoic sediment cover can be up to 500-1000m deep. Geophysical surveys (mainly gravity) may be needed for detailed study for the deep-buried IOCGU targets.

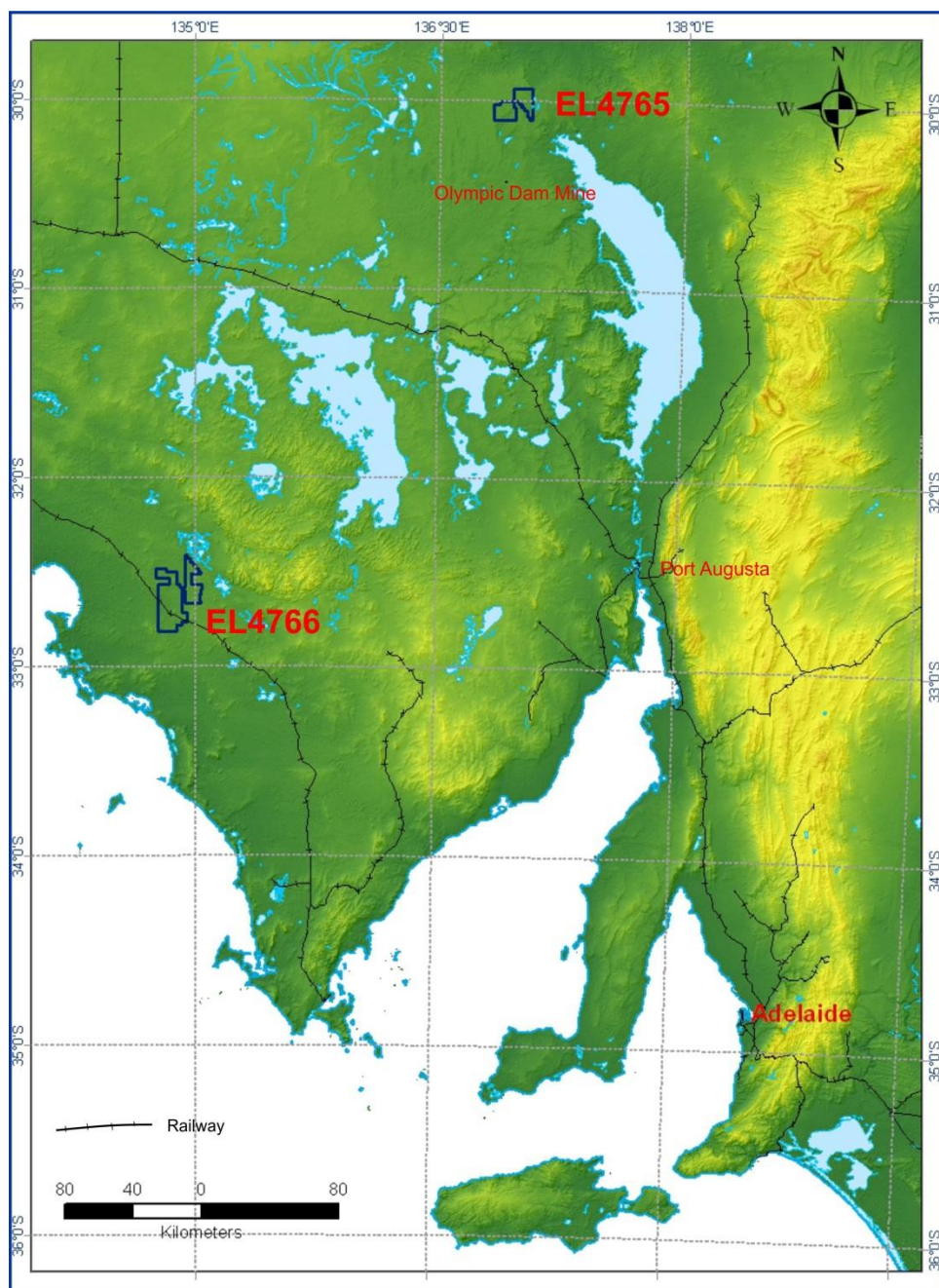


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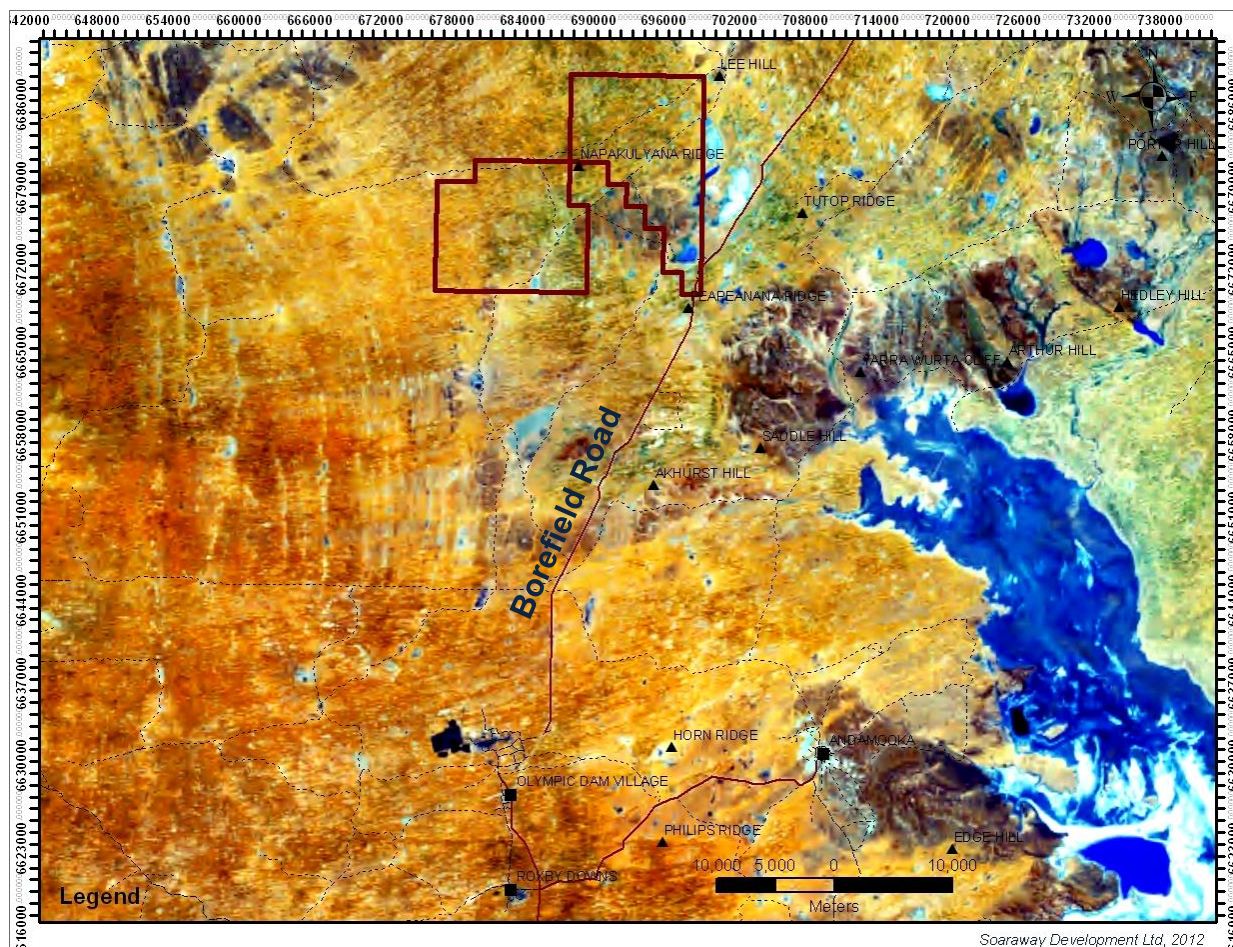


Figure 2. Landsat image shows the EL4765 and location of the Olympic Dam Mine.

Soaraway Development Ltd has undertaken a detailed study of geophysics and geology in the tenement areas during 2011-2012. A field trip to the EL4765 area during the March 2012 enables to understand local and regional geology and mineralisation styles (Photo 1). A ground gravity survey is proposed in the area for finding drilling targets.



Photo 1. Photograph of the trip during March 2012.

## 2. Tenement Status

The EL4766 area is located north of the Olympic Dam Mine and connected by Borefield Road (Figure 3). There are several 4WD tracks cross the tenement.

The tenement will be expired at 10 July 2015 (Table 1).

Table 1. Current status of EL4765 (downloaded from SARIG 2012).

| Tenement Number | Tenement Status | Licencees                           | Operators                    | Commodities Sought         | Location                                          | Tenement Start Date | Tenement Expiry Date | Tenement Surrender Date | Area Legal |
|-----------------|-----------------|-------------------------------------|------------------------------|----------------------------|---------------------------------------------------|---------------------|----------------------|-------------------------|------------|
| EL 4765         | Active          | Soaraway Development Pty Ltd (100%) | Soaraway Development Pty Ltd | Uranium; Base Metals; Gold | Andamooka area - approx 50km north of Roxby Downs | 11/07/2011          | 10/07/2013           | null                    | 264 sq km  |

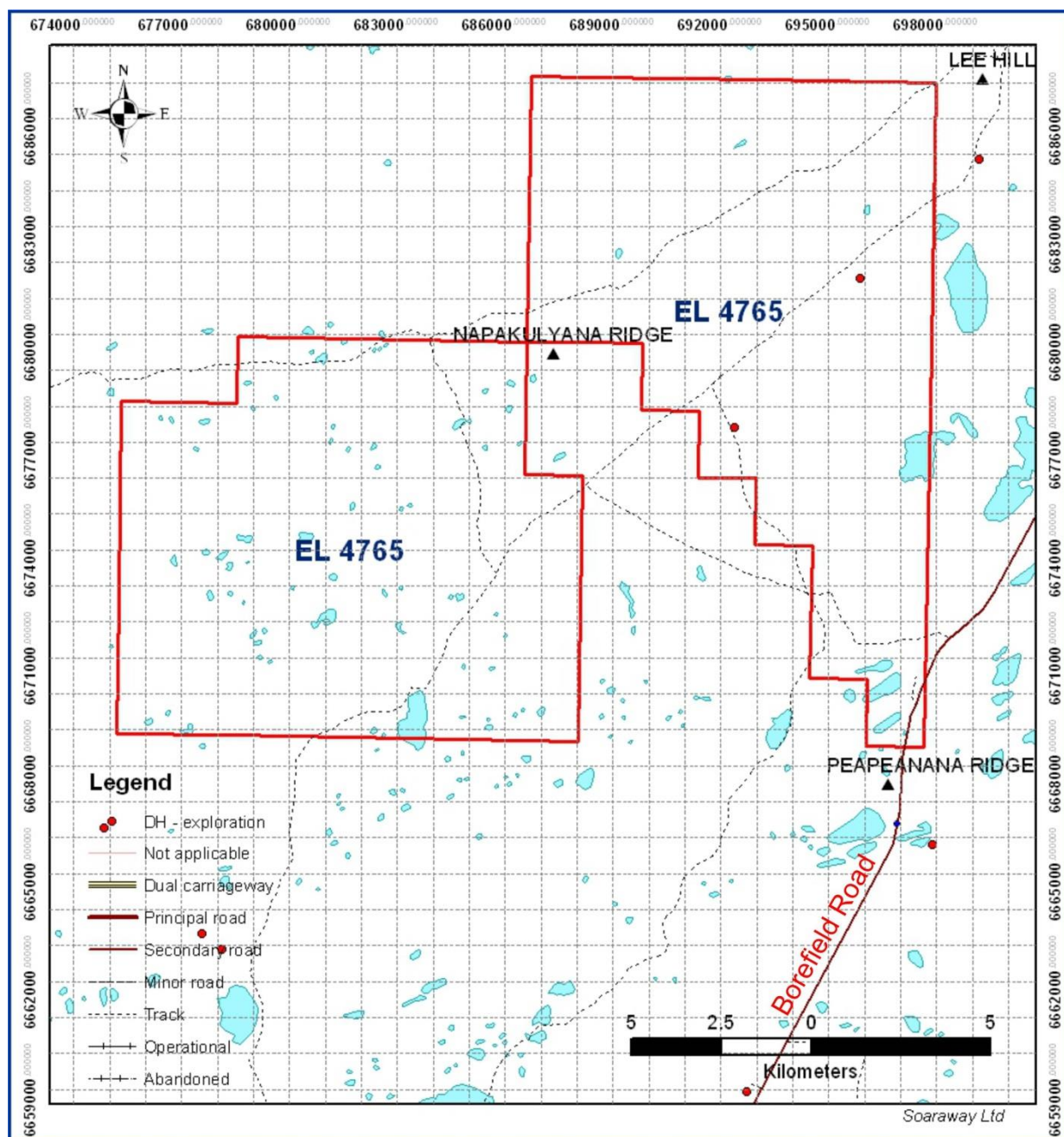


Figure 3. Index map shows the roads related to EL 4765.

### 3. Tectonics and Mineralisation

Tenement EL4765 is located in the eastern Gawler Craton, where is named to be a IOCGU mineralisation belt or corridor that is represented by the Olympic Dam deposits (Figure 4). A number of mines and deposits are present in the belt, including recently discovered Hillside deposits down to south.

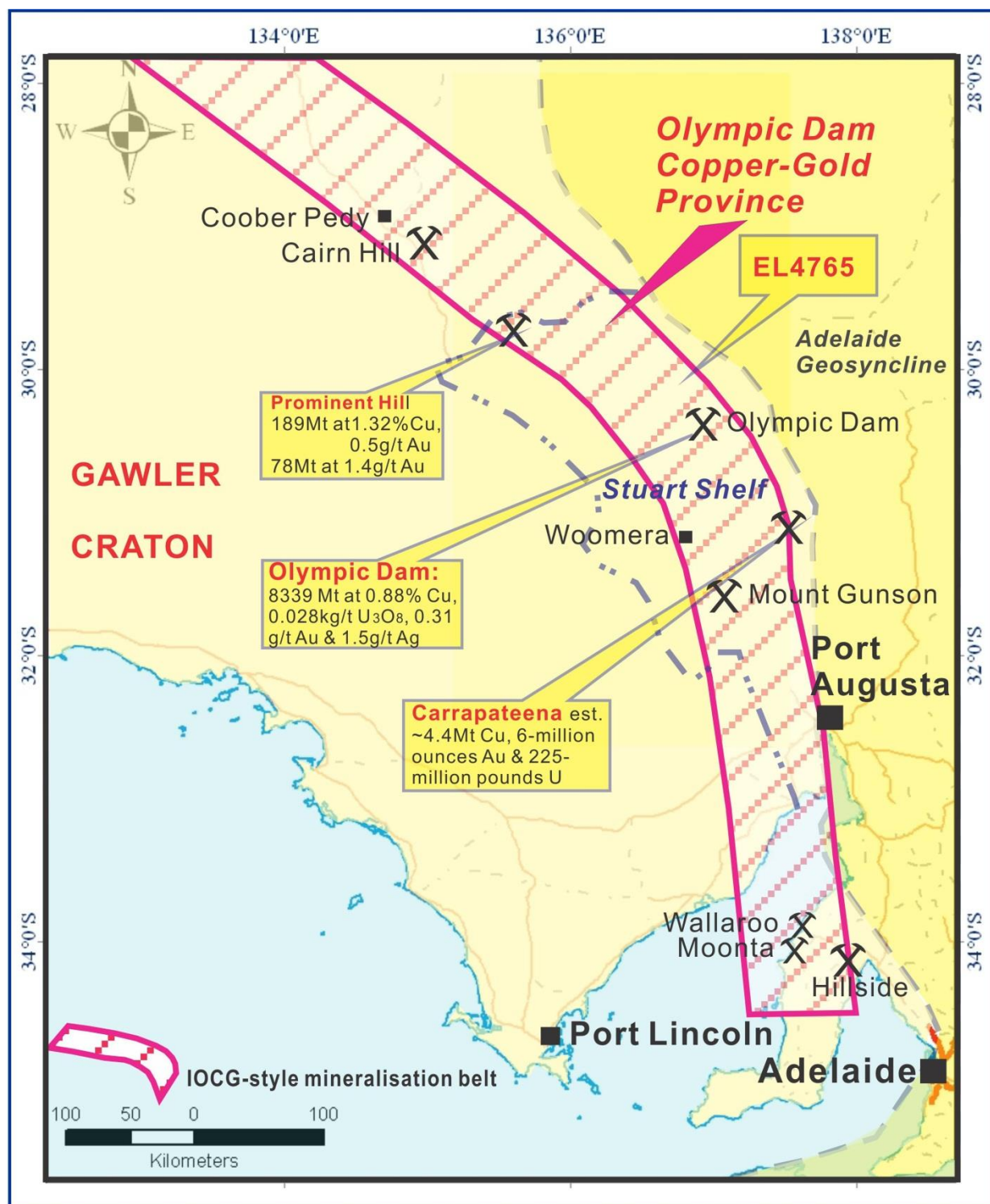


Figure 4. Index figure shows the IOCGU mineralisation belt in the eastern Gawler Craton.

The tenement area was held by Western Mining Ltd (WMC) since the discovery of the Olympic Dam deposit, which also undertook extensive geophysical surveys and drilling in the region. Further exploration by Tasman Resources Ltd resulted the finding of 2 prospective mineralisation targets, Titan and Vulcan Prospects (Figure 5). Of the 2 prospects, The Vulcan Prospect is located ~8km south of the EL4765. At Vulcan, all eight drill holes intersected mineralization. Hole VUD 7 intersected strong chlorite/sericite altered basement volcanics at 847m followed by a thick zone of "classic" IOCGU-style mineralised hematite breccia between 1065m and the bottom of the hole at 1227.8m. This interval of 162m averaged 0.25% Cu, 0.07g/t Au, 2.4g/t Ag and 0.04kg/t U<sub>3</sub>O<sub>8</sub>. VUD 8 intersected 180m mineralization zone, including 21m of 0.63% Cu, 0.28g/t Au and 0.17 kg/t U<sub>3</sub>O<sub>8</sub> from 910m within a thicker lower grade copper zone. Hole VUD 3 included 7.8m down hole at 1.21% Cu, (and 0.35g/t Au) (Figure 6). This 7.8m zone is included within a much thicker interval of 56.65m at 0.59% Cu, which also included a number of other higher grade zones such as 0.75m at 4.44% Cu, 1.34g/t Au, 0.58kg/t U<sub>3</sub>O<sub>8</sub> and 0.65m at 7.82% Cu, 2.41g/t Au and 0.03kg/t U<sub>3</sub>O<sub>8</sub> (Website publication, Tasman Resources Ltd, 2012).

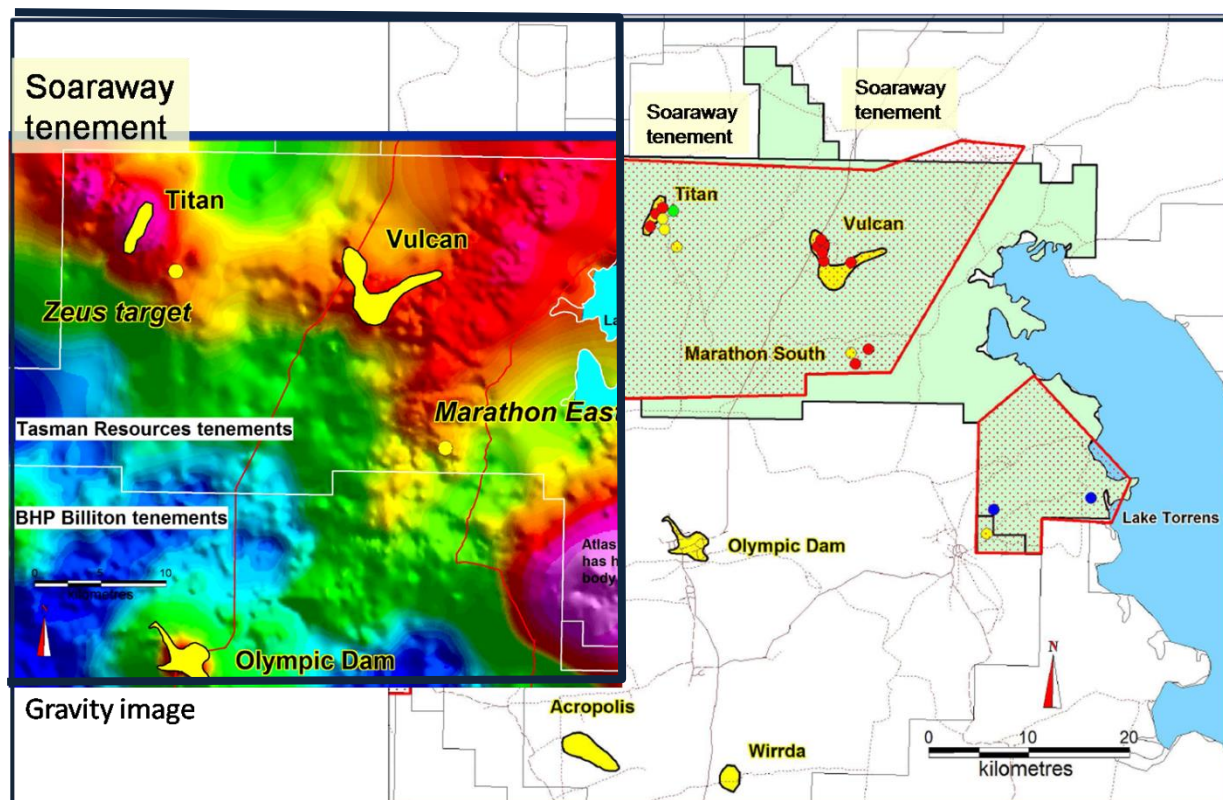


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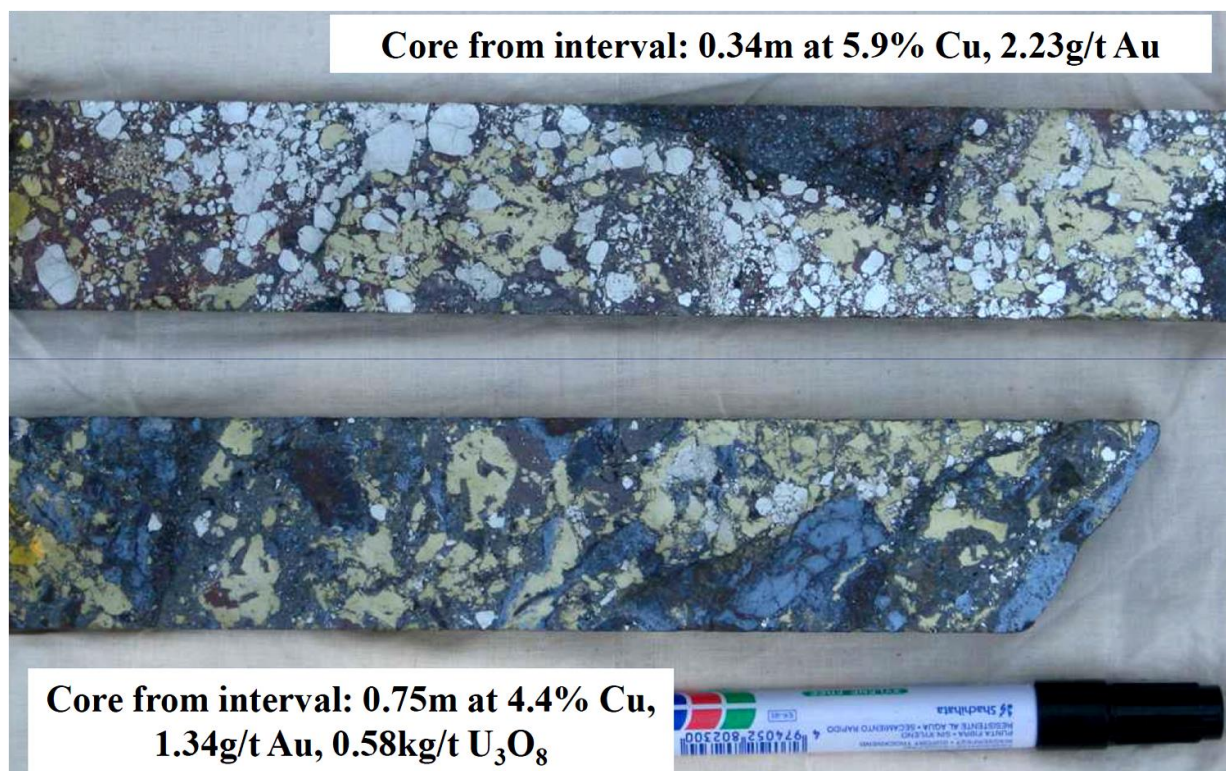


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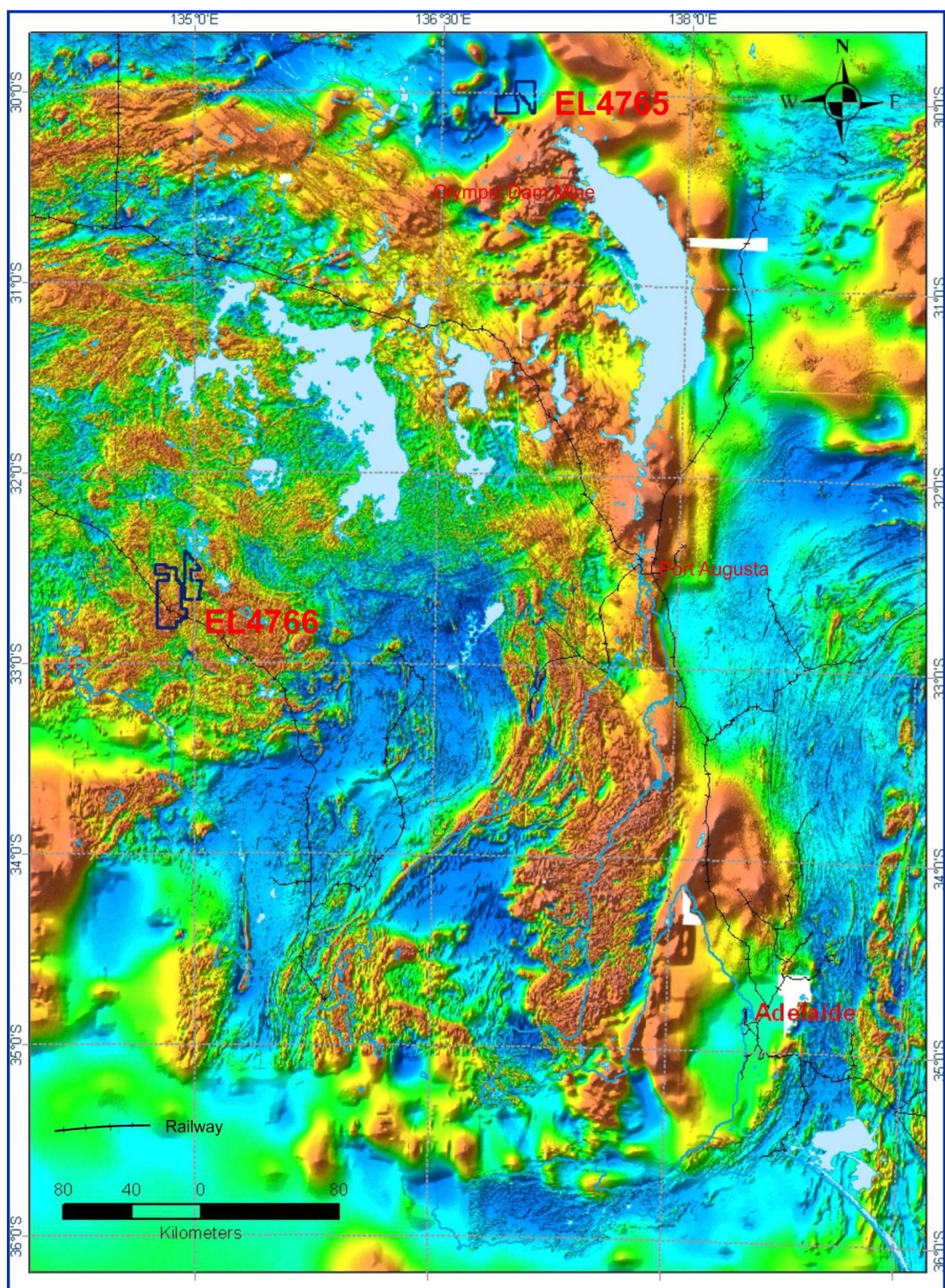


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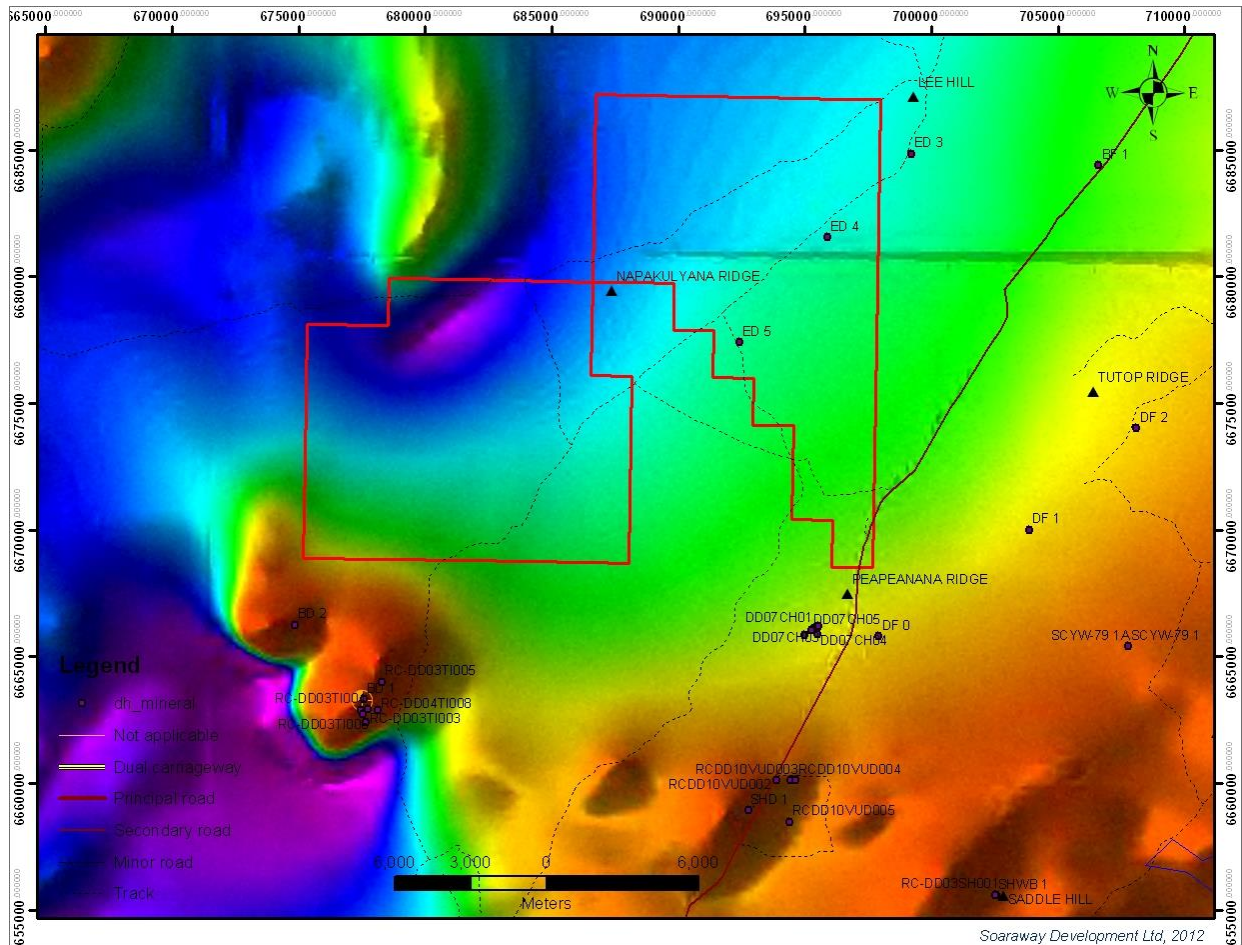


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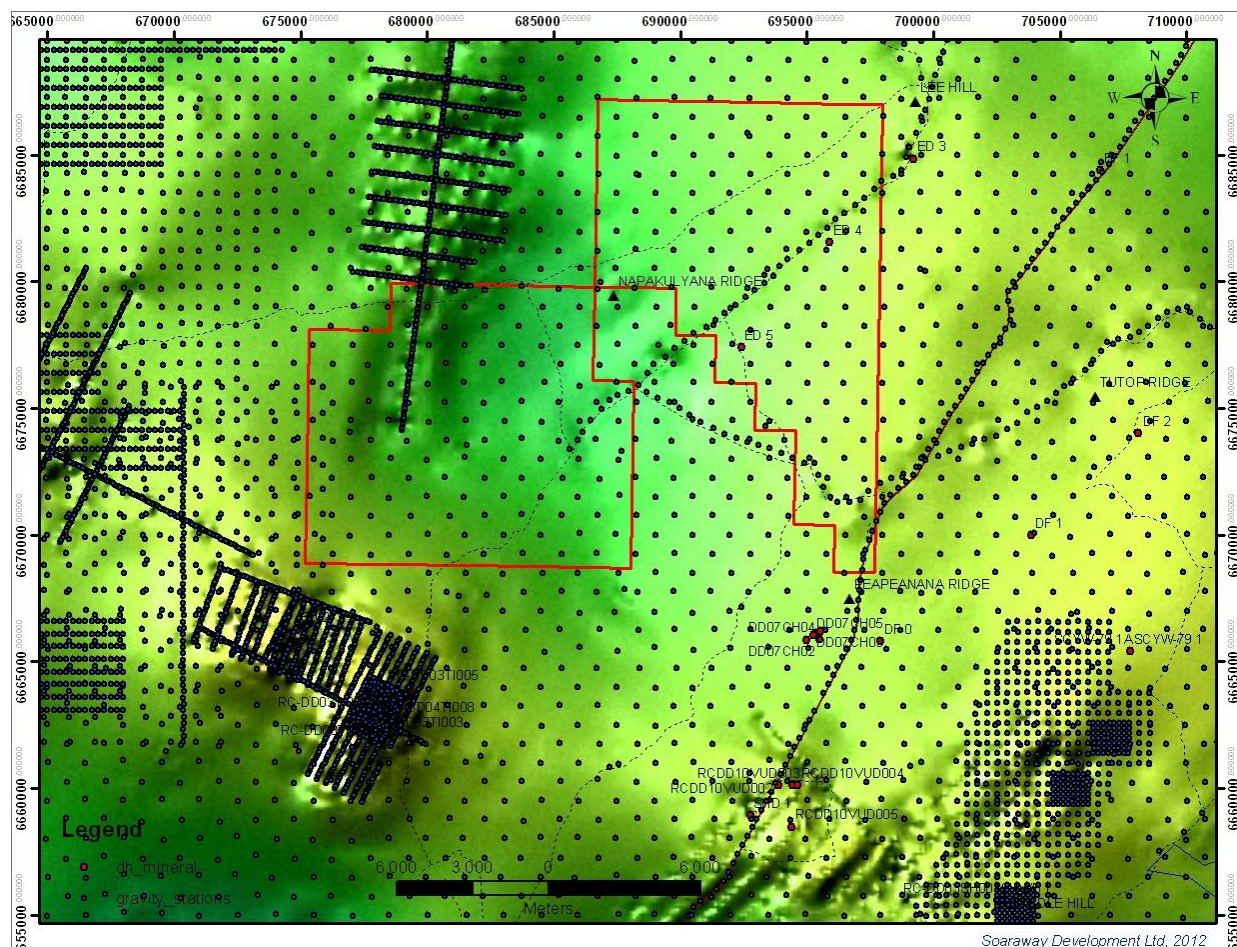


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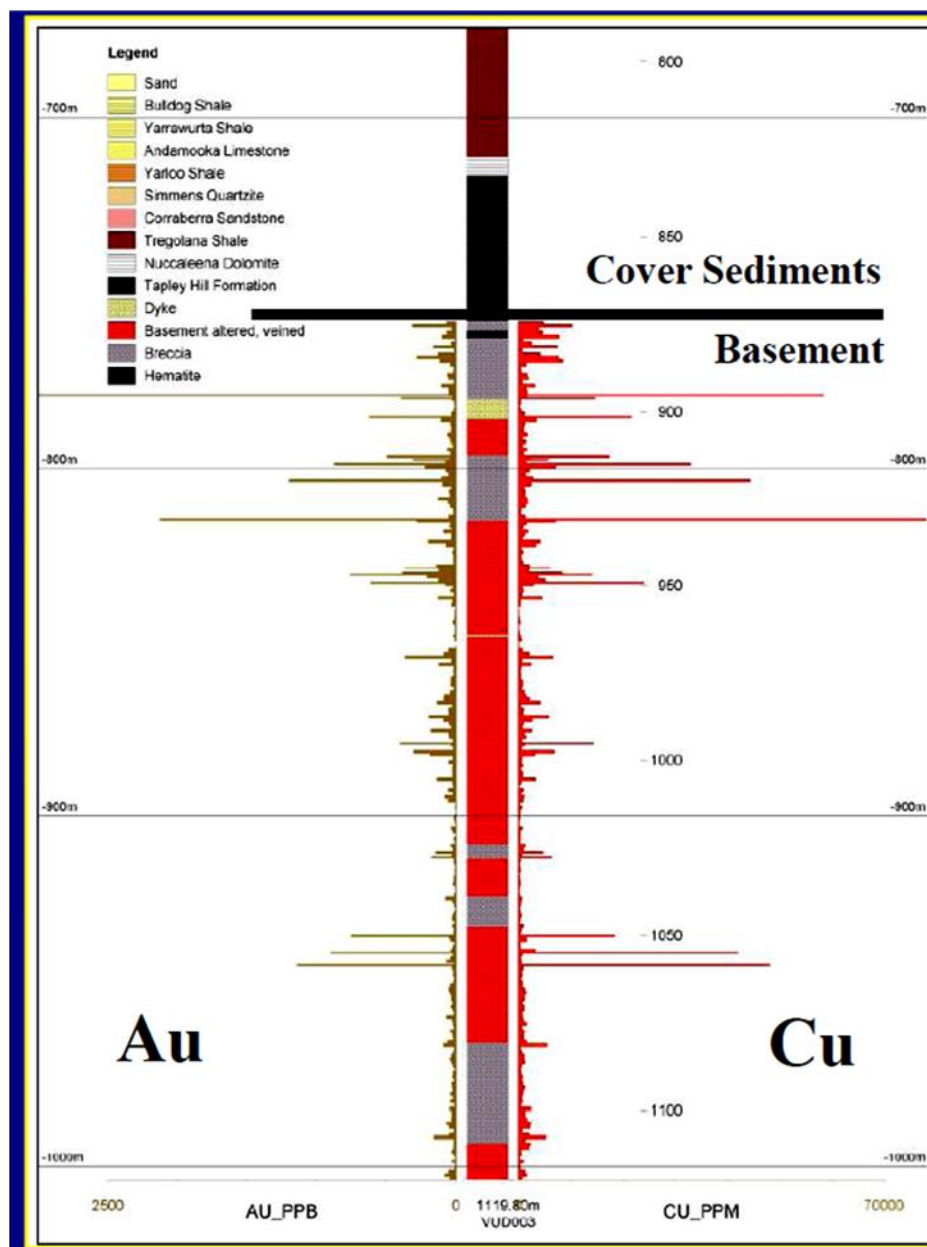


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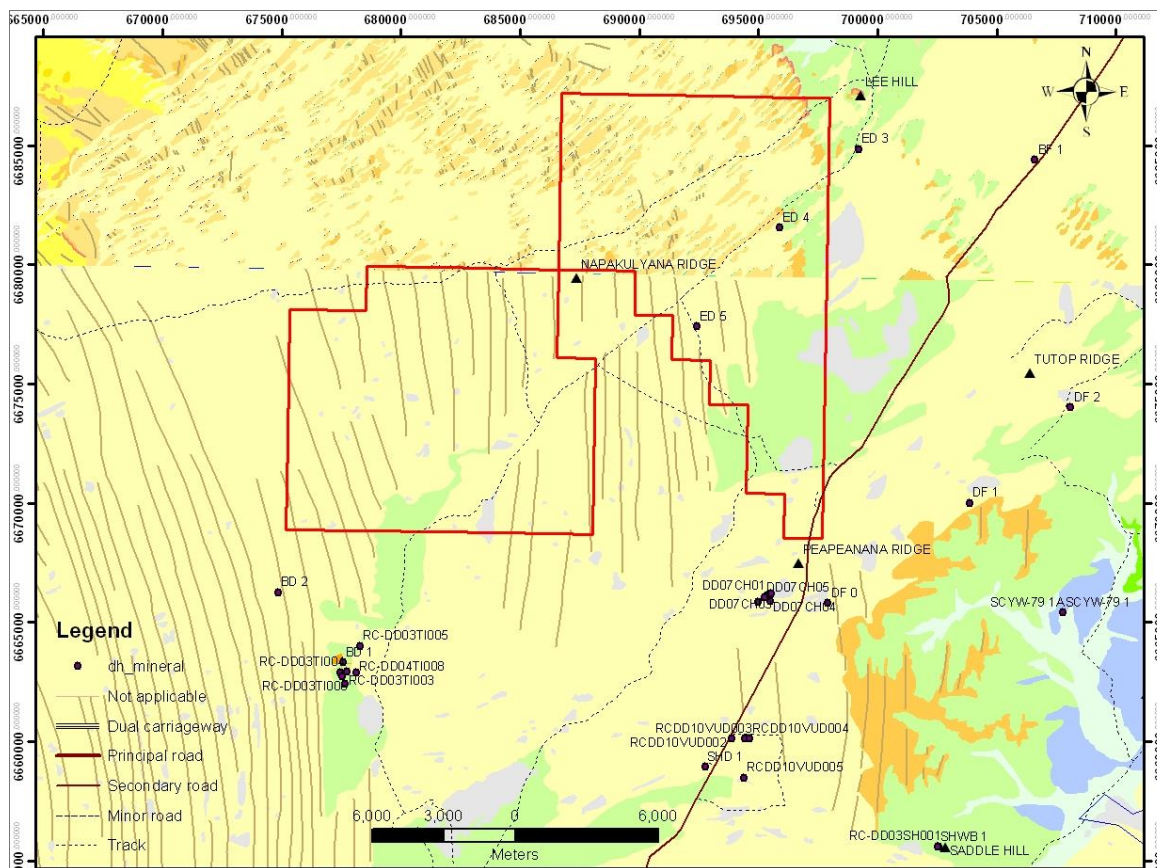


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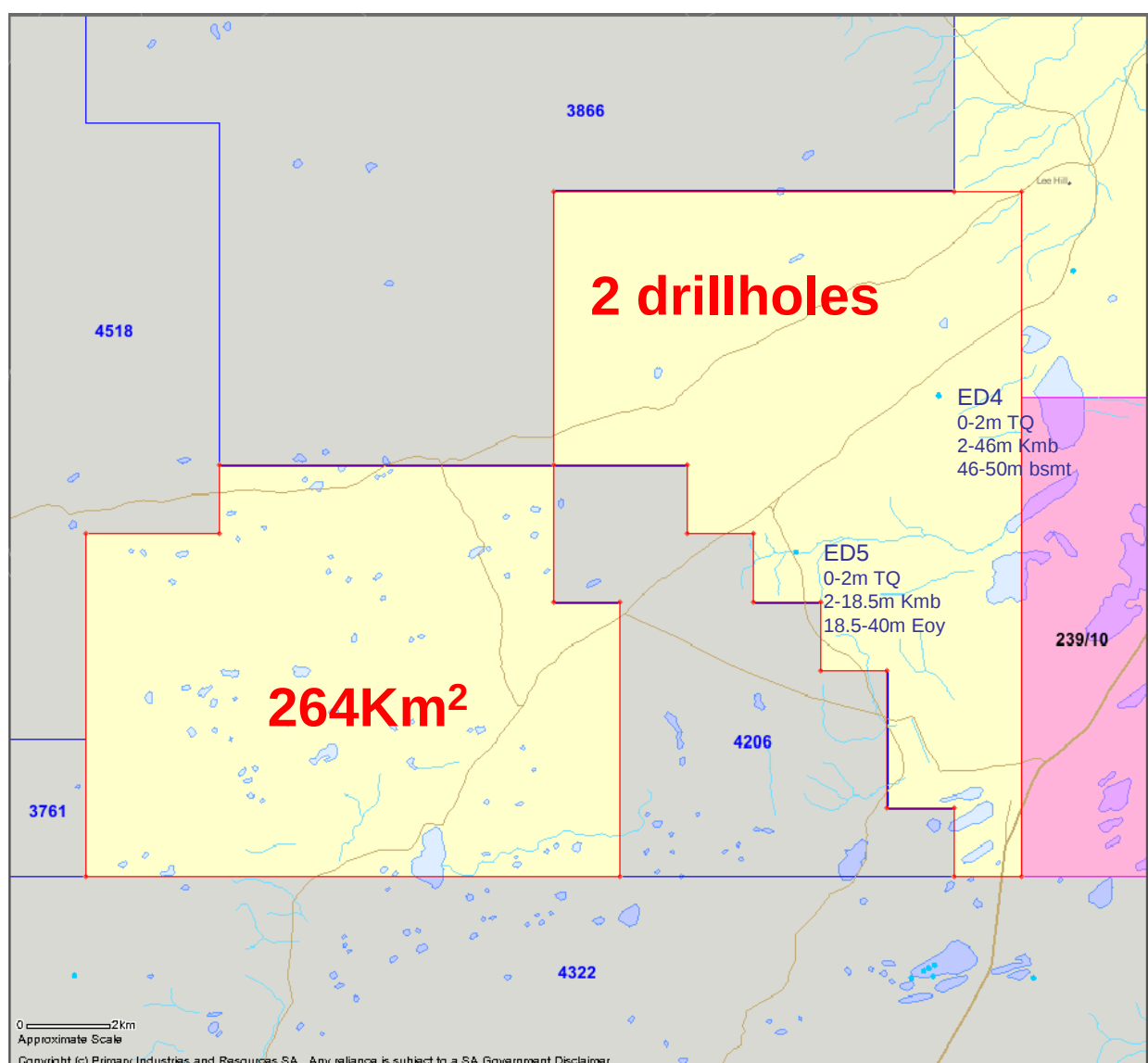


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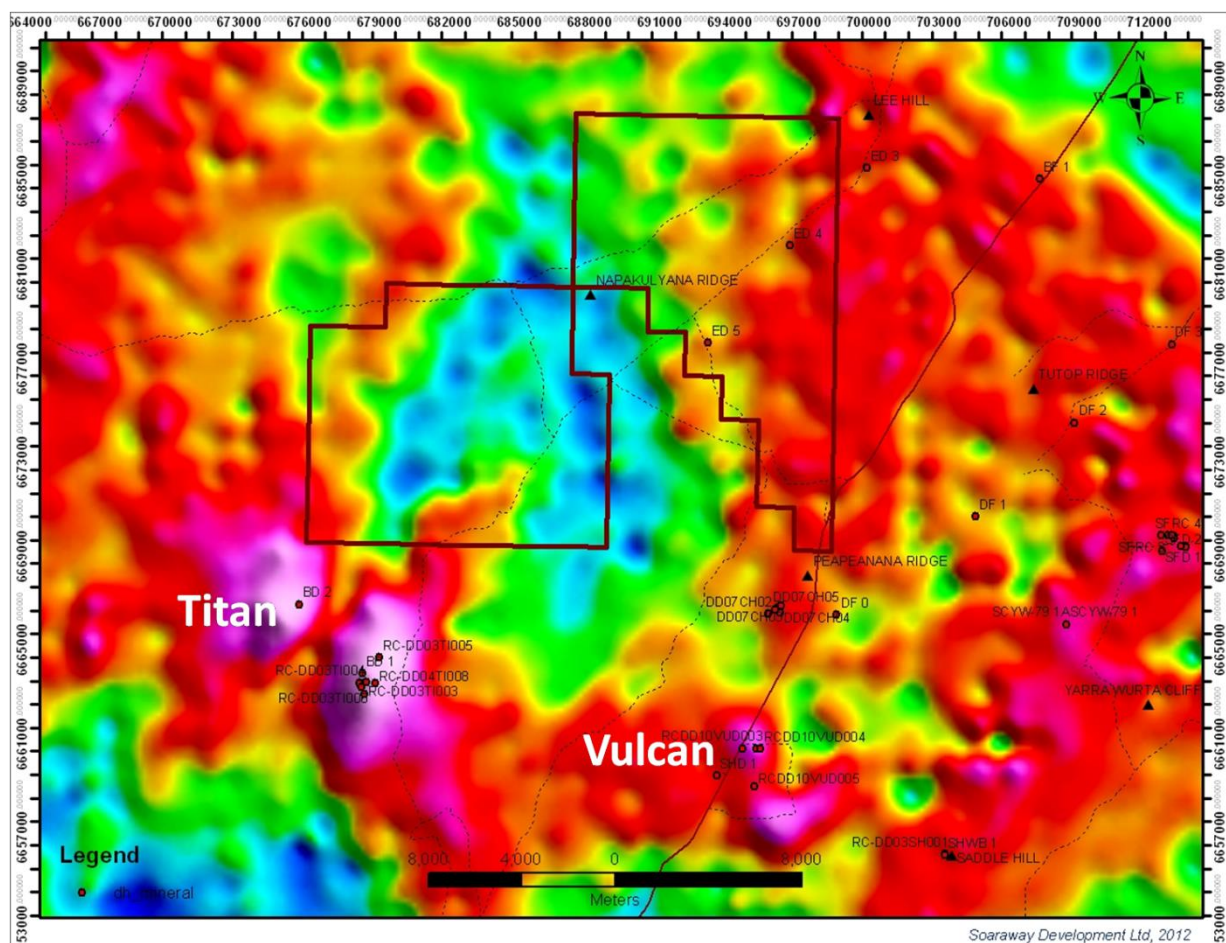


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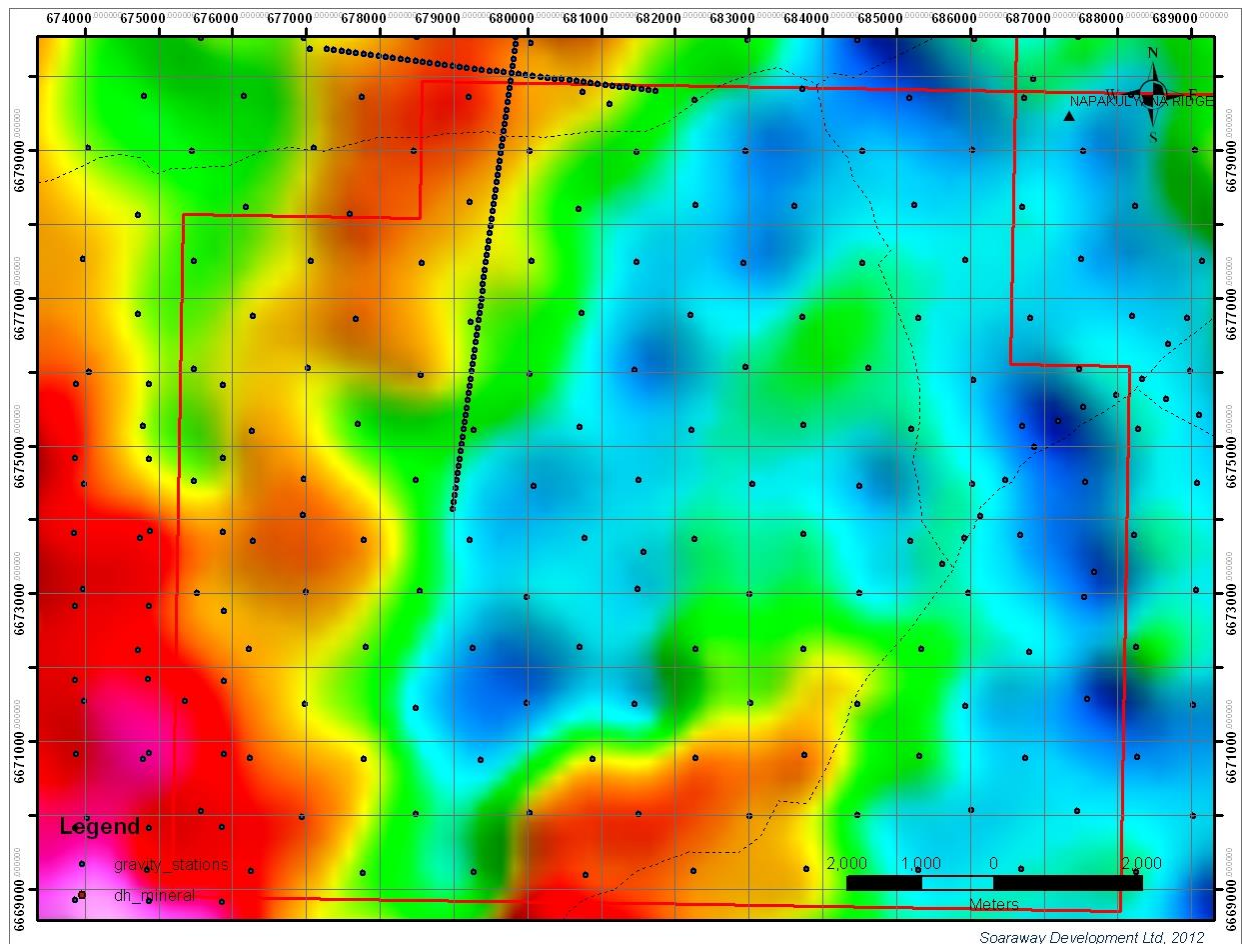


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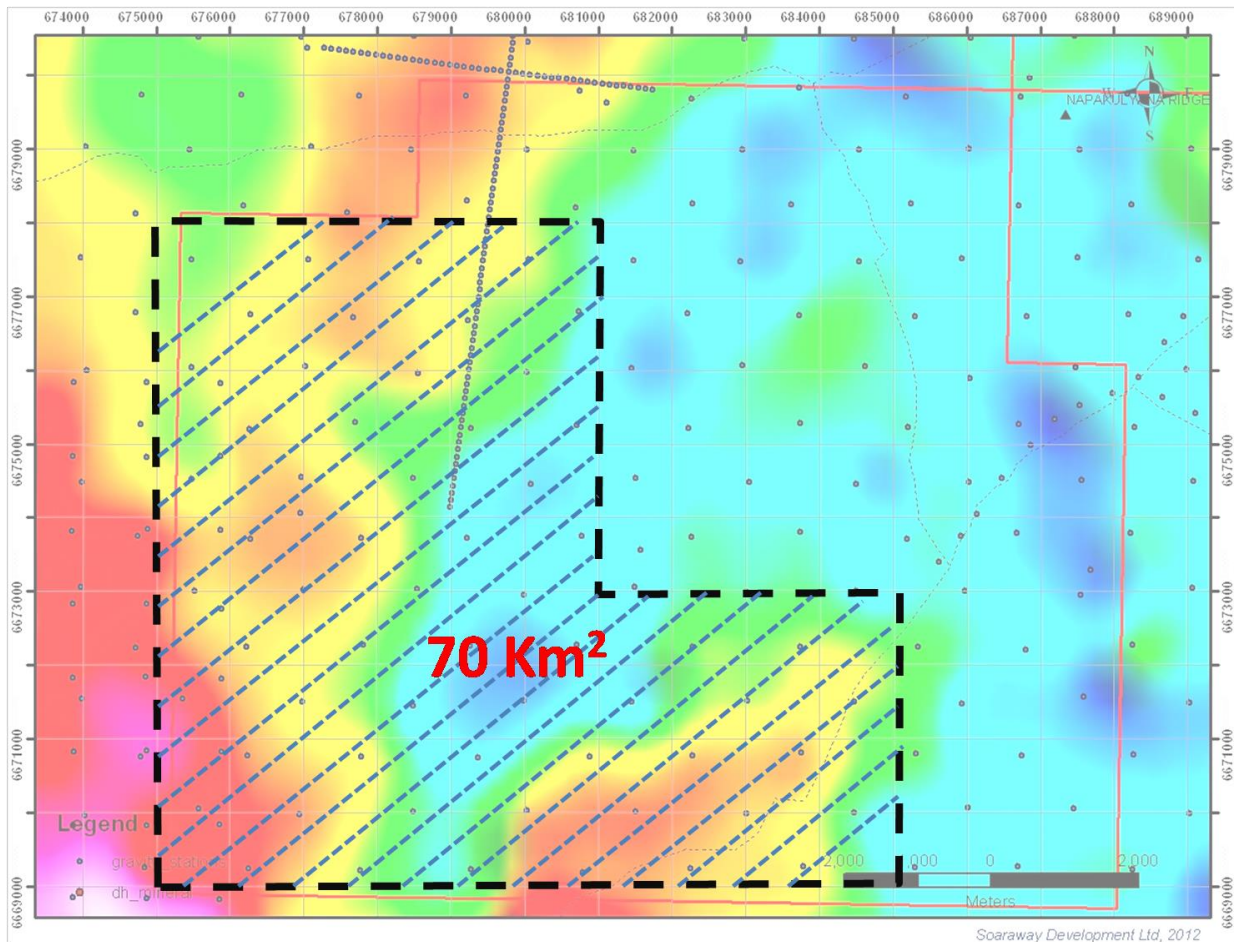


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**-Attached**

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21 Jan. 15

Ms Nella Petruzzella  
EL Reporting Officer  
Department of State Development

Dear Nella,

**Re: Final Technical Reports for EL 4765 and EL 5274**

Please be advised that no work carried out on the tenements during the period, this letter is in lieu of Final Technical Reports.

Yours Sincerely,

Wade Guo

Director

Soaraway Development Pty Ltd