GOLDEN CROSS OPERATIONS PTY. LTD.

ABN 88 050 212 827

A wholly owned subsidiary of Golden Cross Resources Ltd

22 Edgeworth David Ave
Hornsby NSW 2077
Phone (02) 9472 3500
Fax (02) 9482 8488

ANNUAL TECHNICAL REPORT

Year to 21 June 2013

EL 4930 KOOLYMILKA

Tenement Holder:	Golden Cross Operations Pty Ltd
Operator:	Golden Cross Operations Pty Ltd
Report Date:	22 August 2013
Author:	Edited by Bret Ferris

Report GCO744

Note: Prepared with reference to requirements in "Mineral Exploration Reporting Guidelines: A guide to the preparation and submission of technical reports for Exploration Licences in South Australia", prepared by PIRSA – Division of Minerals and Energy Resources.
Font is 12 pt Arial with 1.15 line spacing

Contents

Figures

Tables

1.0 Summary

Golden Cross Operations Pty Ltd commenced exploration activities in South Australia with the objective of discovering significant IOCG deposits with the potential to support a major mining operation. Golden Cross pegged six tenements in the Gawler Craton targeting Iron Oxide Copper Gold deposits, similar to Olympic Dam, Prominent Hill and Carrapateena. Each of these deposits has a variant of IOCG signatures - combinations of coincident magnetic and gravity anomalies caused by each deposit's unique geological setting, structure and mineralogy. The tenements lie within, or close to, the margins of O'Driscoll's G2 continental-scale structural corridor (Figure 1).

Evaluation has progressively identified drill targets based on the intensity of gravity anomalies and the presence of coincident or adjacent magnetic features potentially indicating the presence of large volumes of hematite in major breccia zones hosting chalcopyrite – chalcocite – bornite mineralisation with associated gold, uranium and rare earth minerals.

ELA135-09 was lodged on 8 May 2009 and remained pending until grant as EL4930 on 22 June 2012, when 97% of the area was excised due to overlap onto the Woomera Prohibited Area. The offer of a licence for the remaining area was accepted due to potential prospectivity associated with the flanks of a major regional gravity high inside the WPA.

During the year to 21 June 2013 modelling of the regional data was undertaken to assess the viability of the granted remnant EL4930. Introduction of new WPA access procedures on 5 October 2012 was followed by the signing of a new 5 year WPA Access Deed by Golden Cross on 18 December 2012.

Further evaluation was pending completion of infill regional gravity, scheduled for release at the end of 2013.

2.0 Introduction, History and Exploration Rationale

2.1 Location and Access

EL4930 is approximately 50 km west of Olympic Dam on the northern edge of the Woomera Prohibited Area Continuous Use Zone [“Red Zone”].

Access to the area is provided by the Woomera – Roxby Downs Road, and station tracks . Most unsealed roads are closed after rainfall exceeding 10mm.

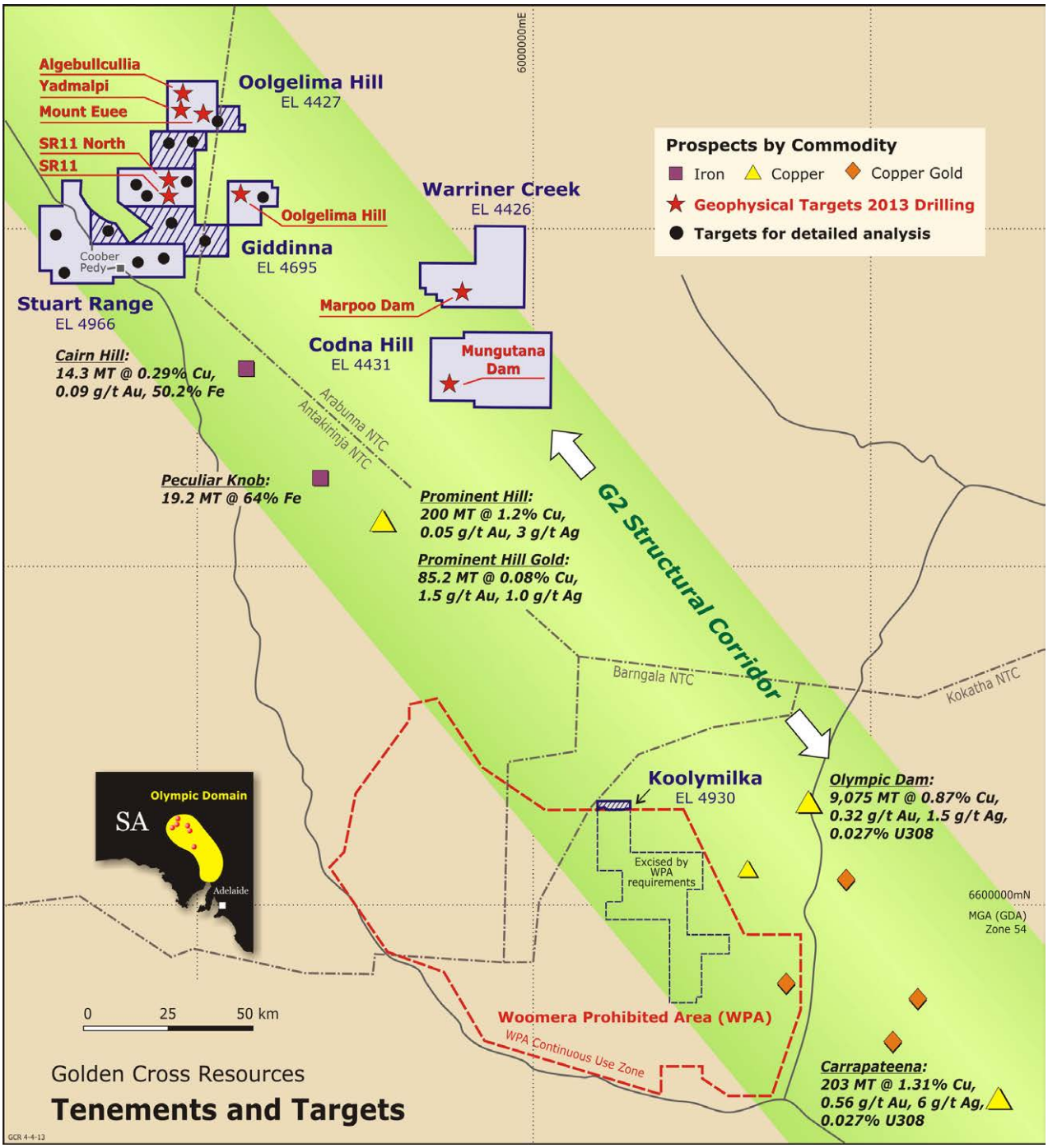

Figure 1: GCR IOCG tenements

[showing known deposits , Native Title boundaries & Woomera Continuous Use Zone.

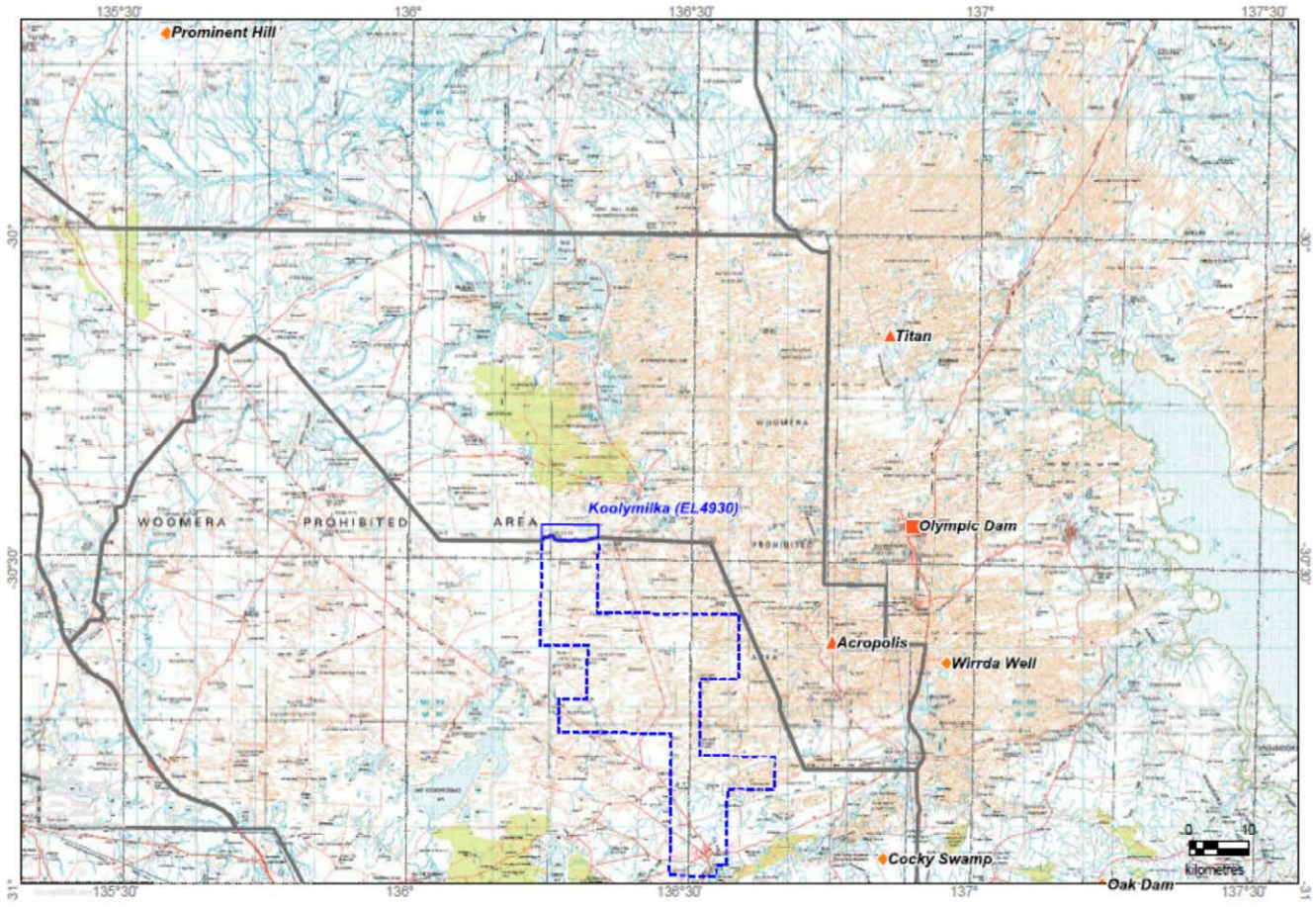

Figure 2: EL4930 Location
[showing copper/gold deposits]

2.2 . Tenement Details

ELA135-09 was lodged on 8 May 2009 over 926 sq. km.

On 5 May 2011 the 2010 Final Report on access to the WPA was accepted by Government agencies and on 1 December 2011 Golden Cross was notified that 97% of the application area, that part inside the Woomera Red Zone, would be excised, leaving 24 sq.km of the original 926 sq.km for grant on 22 June 2012.

A Moratorium on access agreements with Woomera Prohibited Area was in place at the time of grant. New WPA procedures were announced 5 October 2012, and a 5 year Access Deed signed off by all parties on 18 December 2012.

TENEMENT PROJECT NAMES	Area sq.km	APP DATE	ELA	TEN #	HOLDER	GRANT DATE Original	EXPIRY DATE
Koolymilka	24	8-May-09	*135-09*	**4930**	GCO	22-Jun-12	22-Jun-14

Table 1: EL4930 Tenement Details

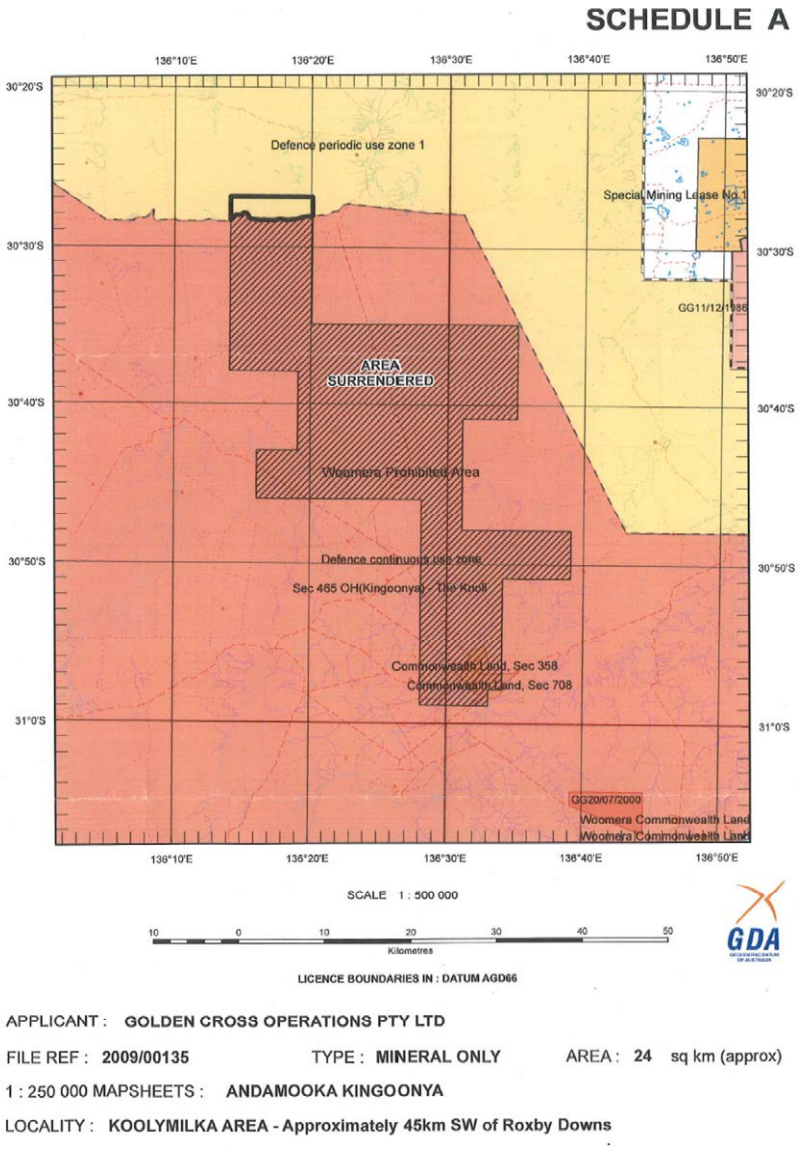

Figure 3: EL 4930 Application Configuration

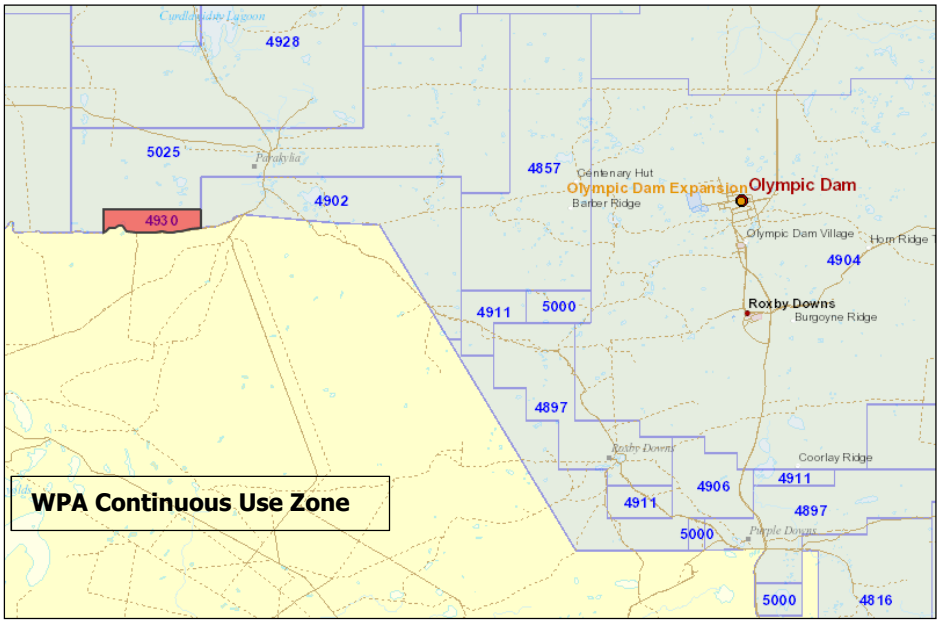

Figure 4: EL 4930 from 22 June 2012

2.3 . Land Access

EL4930 is on Parakylia Pastoral Station, and within Native Title Claim SC2009/001 on behalf of the Kokata Unwankara, which remains to be determined.

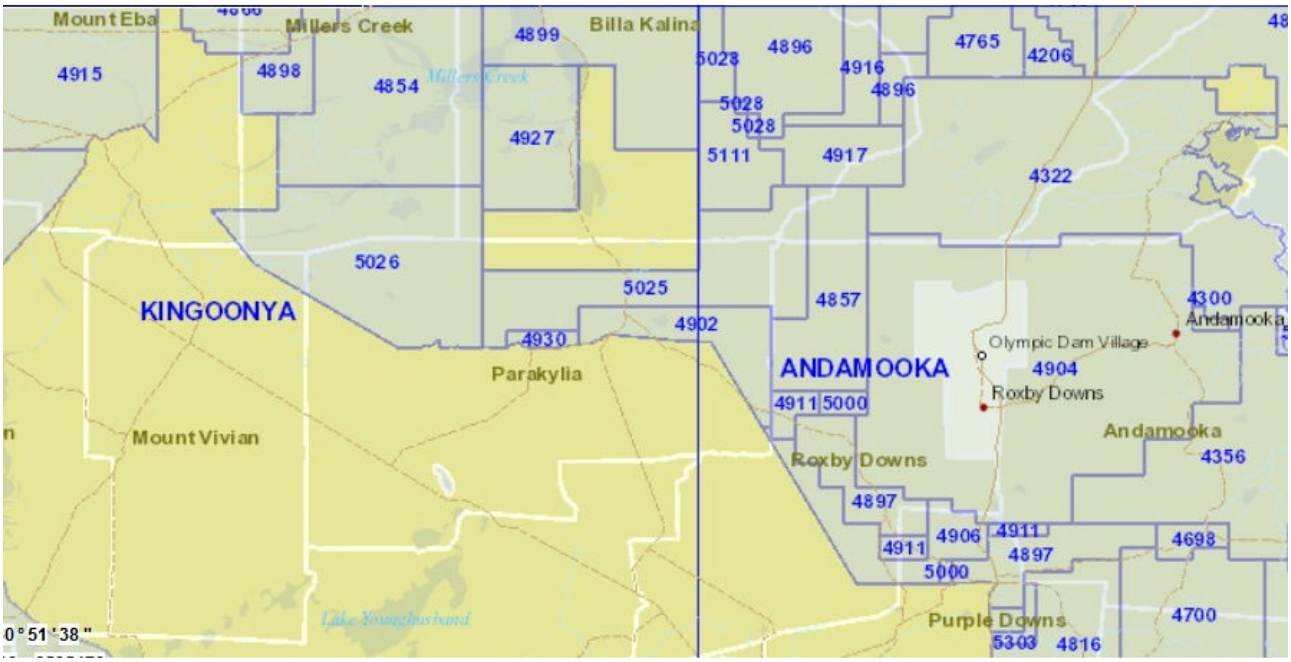

Figure 5: EL 4930 Landholders

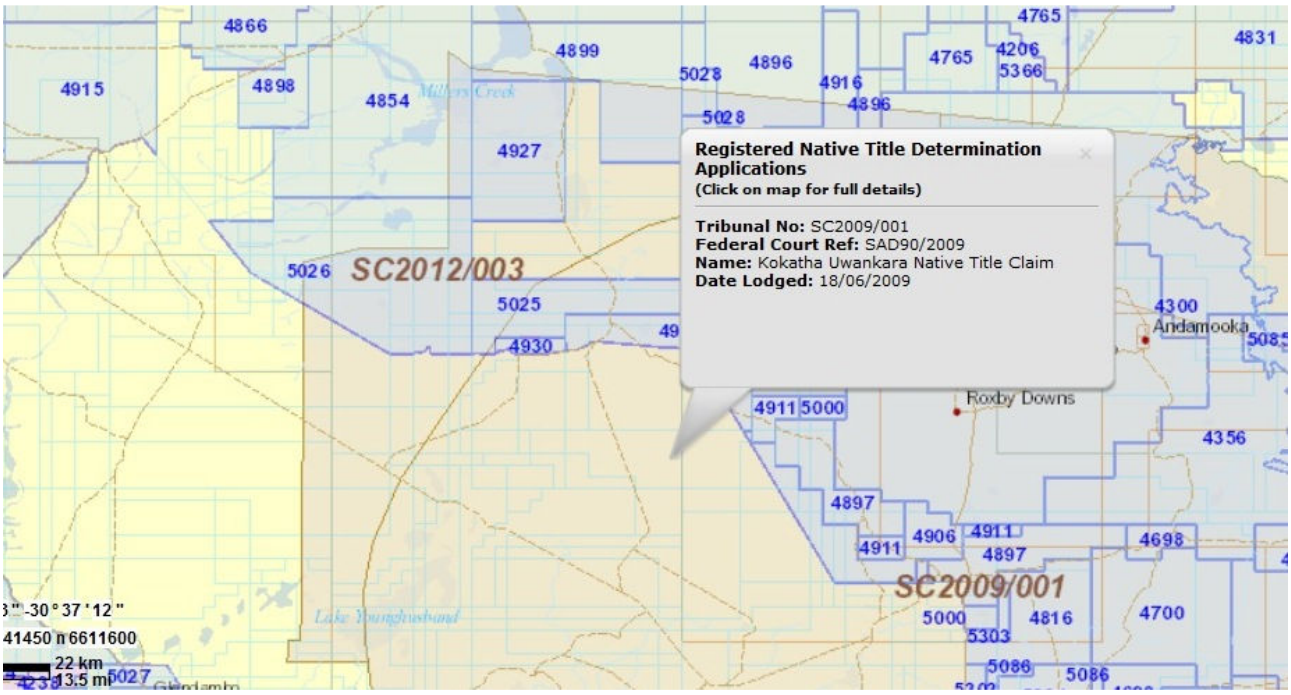

Figure 6: EL 4930 Native Title Claims

2.4. Exploration History

1976 Dampier Mining – Near-surface phosphate exploration associated with the Andamooka Limestone. A 9 hole rotary drilling programme was carried out to test a possible basin structure.

1979 Australian Selection – Targeted IOCG mineralisation by following up indications of stratabound lead and zinc mineralisation previously intersected by Australian Selection. Ground magnetic and gravity surveys were undertaken over the Portulacca aeromagnetic anomaly (south of the current ELA area) and three percussion holes drilled (total 730m) to test stratigraphic and geophysical targets; basement was not reached. Ground was relinquished where depth to basement was estimated to be in excess of 1000m.

1982 Seltrust Mining – Undertook several ground gravity surveys, including one over the Portalucca anomaly which occurs within the current Koolymilka ELA, before focusing on the Eucolo anomaly to the south of Koolymilka. Percussion drilling was completed to assess the stratigraphy of the cover sequence, with elevated Zn and Pb in the basal Tapley Hill Formation, but geophysical reviews suggested Eucolo did not have 'the Olympic Dam style geophysical signature' and no further work was undertaken.

Regional depth to basement estimates within the Portalucca tenement inferred a depth of cover sediments in excess of 1000m, with the exception of Eucolo wher a depth of 500-800m was estimated.

1982 Esso Exploration – Drilled coincident magnetic-gravity anomaly to the southeast of EL4930 and intersected Gawler Range Volcanics. While the magnetic target was not fully explained, the tenement was relinquished on the lack of copper mineralisation observed in the core (no assays).

In a separate tenement, Esso also undertook ground magnetic and infill and detailed gravity surveys, and Maxi-Probe ground EM soundings on two grids near Beddome Hill, within the current ELA area. The target was a 4-6mgal regional gravity high thought to be associated with buried Olympic Dam or Acropolis type IOCG deposits. Modelling of the geophysics gave an inconclusive estimate for depth to basement and no firm encouragement was provided to initiate drill testing.

Esso also undertook gravity surveys and ground magnetics over a regional gravity anomaly 15km south of the Parakilya homestead (to the north of EL4930). Geophysical modelling indicated that an elongate anomaly is fault bounded to the north and may lie at less than 750m depth.

1983 MIM - MIM held a tenement southeast of EL4930, extending as far as Woomera. Ground magnetic and gravity surveys were undertaken over the Buller Dam anomaly on the western flank of the Acropolis anomaly. A percussion/core hole PPR5/SAP1 was drilled at Buller Dam but terminated in Pandurra Formation at 1369m; basement was not reached. MIM also flew geophysical surveys over the Eucolo and Portalucca anomalies and modelling suggested that the source depth of the gravity anomaly was 1000m and 300m for the magnetic anomaly. It was suggested that this might represent a magnetic horizon in the Gawler Range Volcanics with denser basement below the volcanics. No drilling was undertaken at this anomaly.

2.5 Exploration Targets, Objectives and Rationale

Interest in the areas was initiated at the SAREIC Conference in Adelaide on 5-6 May 2009 when a paper presented by Laz Katona, “GIS Mapping, 3D Models & IOCG Potential Mapping”, highlighted many coincident or related regional magnetic and gravity highs some of which were over vacant land.

Each of the known IOCG deposits, Olympic Dam, Prominent Hill and Carrapateena has unique variants of geophysical magnetic and gravity signature, which are now the target of exploration elsewhere.

Exploration is planned to systematically evaluate selected coincident magnetic and gravity anomalies, in prospective structural settings, by the application of appropriate geophysical techniques prior to testing by drilling programs.

Most of the tenement has not been covered by detailed gravity surveys. Only the eastern margin has been included in a ground-based gravity survey at 1km spaced intervals (Fig 5).

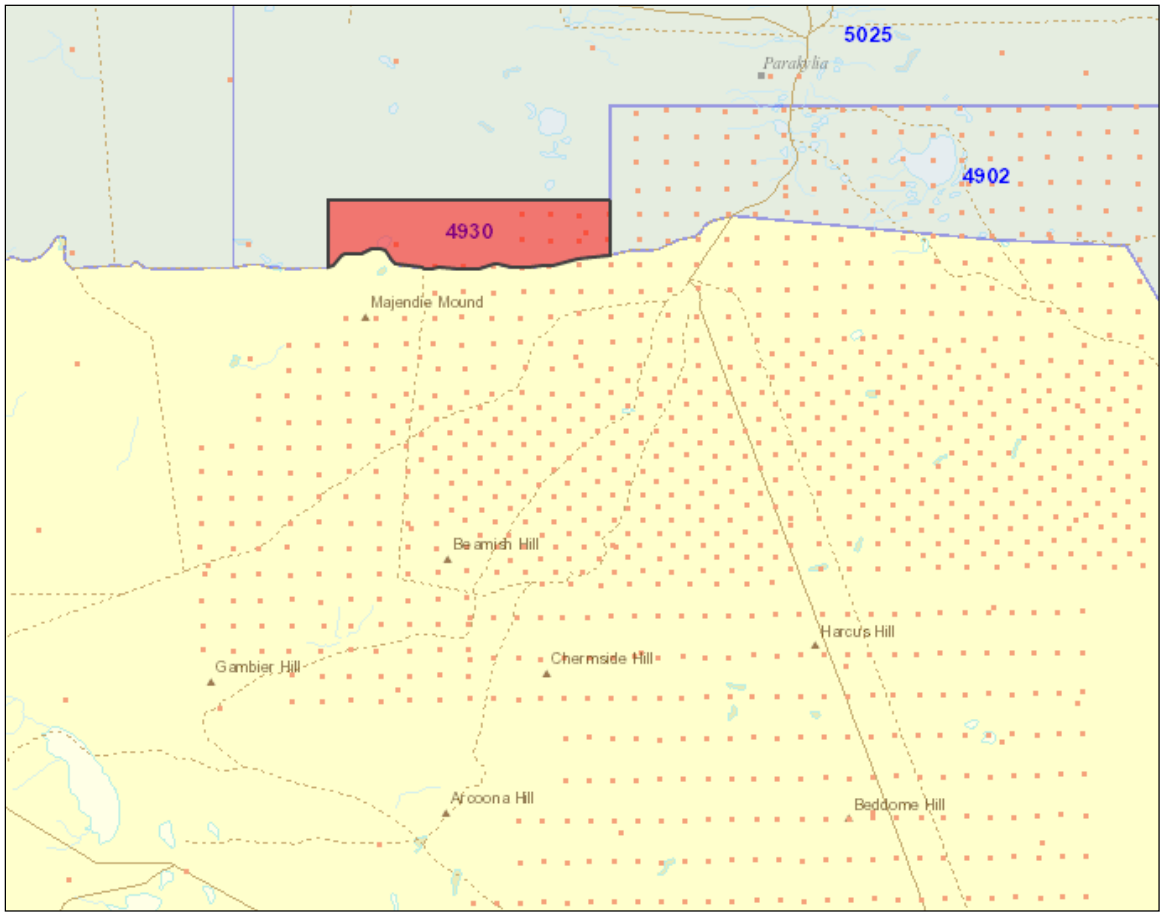

Figure 7: Gravity Station Locations 2012

3.0 Geologic Setting

3.1 Gawler Craton Geology

The Gawler Craton covers approximately 440,000 sq km of central South Australia. Basement rocks consist of the Archaean-Palaeo-proterozoic **Sleaford Complex** (exposed in the southern Gawler Craton) and the **Mulgathing Complex** (exposed in the west and north). Both consist of ortho- and paragneiss metamorphosed to granulite facies and were deformed by the Sleafordian Orogeny (~2400 Ma).

Palaeo-proterozoic rocks overlie the Archaean core to the north and east of the craton and include metamorphosed marine shelf sediments of the **Hutchinson** and **Wallaroo Groups** (onlap basins 2000 – 1650 Ma), which are intruded by granitoids of the **Donnington** and **Moody Suites**, mafic dykes and younger metasediments and felsic volcanics. Palaeo-proterozoic sediments were deformed by the 1670-1640 Ma **Kimban Orogeny**.

The Meso-proterozoic Gawler Range Volcanics form a felsic volcanic province in the central Gawler Craton where there is extensive outcrop. **Hiltaba Suite** granites are co-magmatic with the **Gawler Range Volcanics** and are dominated by felsic granite plutons which are characteristically pink from hematite staining of the feldspar crystals. These host the Olympic Dam deposit and other known IOCG deposits within the Gawler Craton. The Hiltaba Suite granites and the Gawler Range Volcanics possibly represent partially melted crust over a mantle plume and are also generally believed to be the source for IOCG mineralisation within the Craton. A stratigraphic column of the basement rocks is shown in Figure 8.

The basement rocks are unconformably overlain by thick sequences of Adelaidean sediments which typically include Corunna Conglomerate, Pandurra Formation red beds, Tapley Hill Formation Siltstone, Whyalla Sandstone, Arcoona Quartzite and Tregolana Shale.

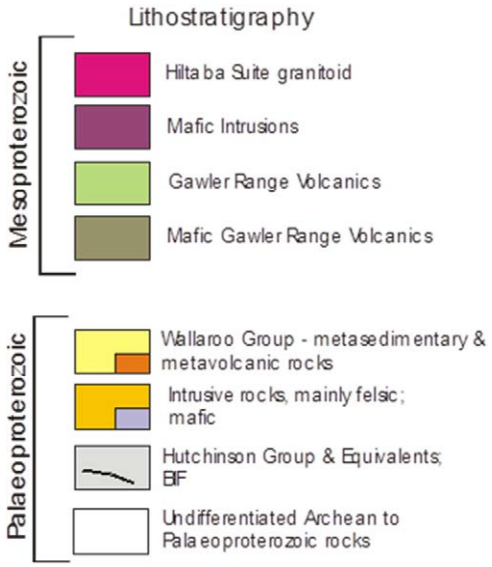

Figure 8: Lithostratigraphy: Gawler Craton Basement

3.2 Gawler Craton Mineralisation

The Gawler Craton hosts the Olympic Dam Cu-U-Au-REE deposit discovered by WMC in 1975; but it was not until 2001 that the Prominent Hill was discovered, followed by Carrapateena in 2005.

IOCG deposits within the Gawler Craton are hosted by basement rocks that underlie substantial thicknesses of sedimentary cover. They have a strong spatial association with the Gawler Range Volcanics and Hiltaba Suite granite forming part of a >500km long metallogenic province along the eastern margin of the Craton (**Figure 7**). Other mineral occurrences within this Olympic Cu-Au Domain include Oak Dam, Acropolis, Wirrda Well and Emmie Bluff. The Olympic Domain also includes the Mt Woods Inlier, which hosts Prominent Hill.

The Moonta Subdomain forms the southern part of the Olympic Cu-Au province. Historic production comprises over 330,000 tonnes of Cu from vein and shear-hosted mineralisation in the Moonta-Wallaroo district. The domain basement comprises metasediment and metavolcanics of the Palaeo-proterozoic Wallaroo Group which were deformed and metamorphosed to upper greenschist-amphibolite facies during the Kimban Orogeny. Hiltaba Suite granites and mafic intrusions intruded between 1600Ma and 1575Ma.

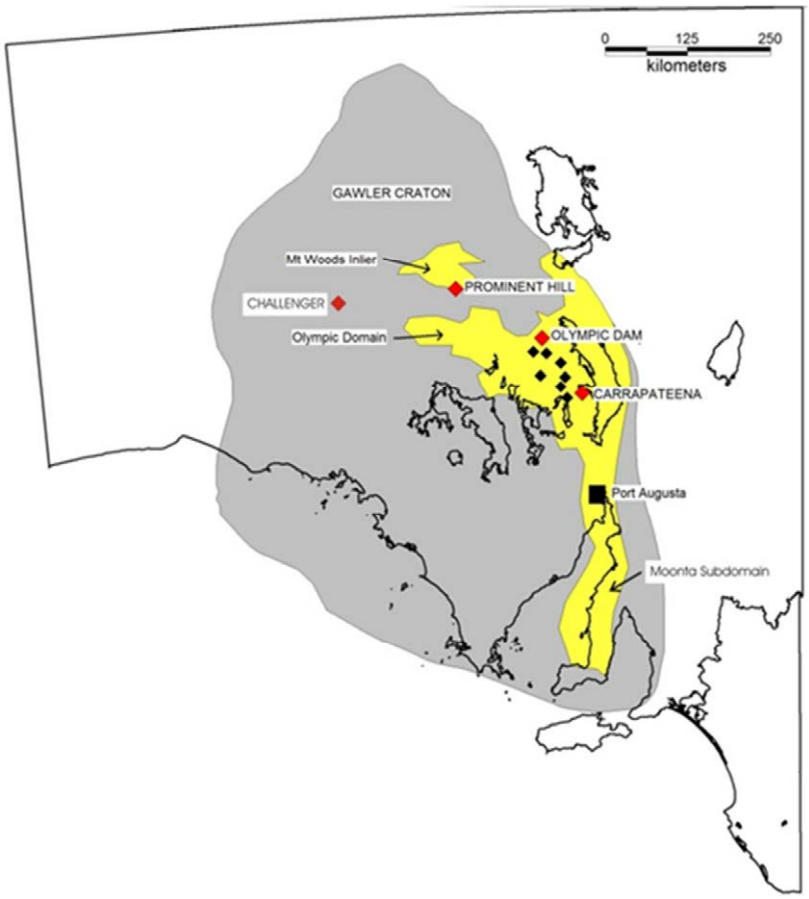

Figure 9: Location of the Olympic Domain, Mt Woods Inlier & Moonta Subdomain

The IOCG deposits have been interpreted to have formed in an orogen-parallel zone controlled by the intersection of significant orogen-parallel structures and oblique structures. The state aeromagnetic data (Figure 8) shows cratonic zones and mobile belts, defining domain boundaries and cross-cutting structures (Figure 9).

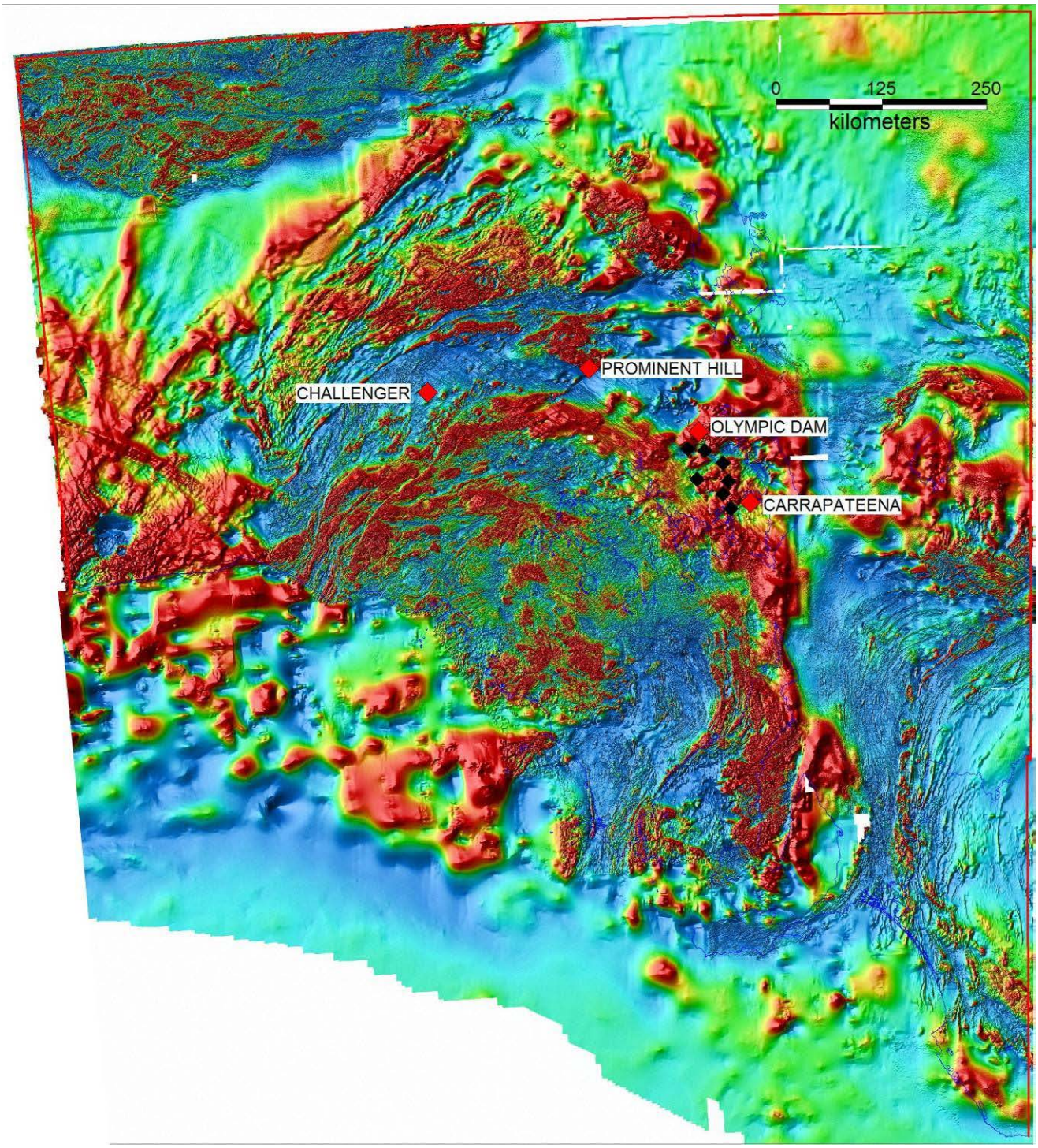

Figure 10: SA TMI Image showing major IOCG deposits

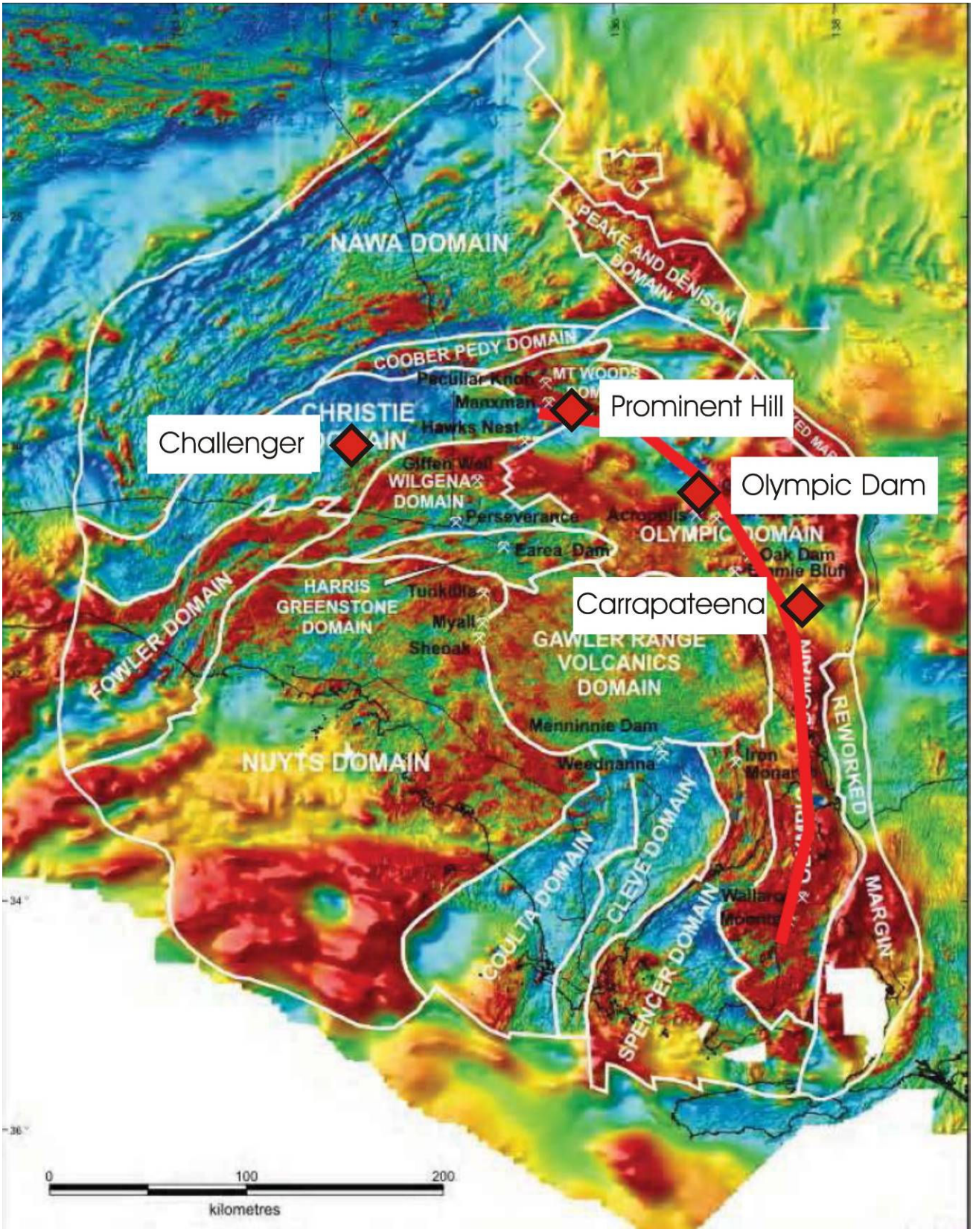

Figure 11: GawlerTectonic Domains & major IOCG deposits on TMI.

3.3 Geology of EL 4930

EL4930 is 50km west of Olympic Dam, in the northwestern section of the Olympic structural and mineralisation domains. It is on the eastern margin of the Cariwerloo Basin into which Mesoproterozoic Pandurra Formation sediments were deposited. The Palaeoproterozoic basement is interpreted to consist of Donnington Suite granitoids, Hutchinson Group metasediments. These older country rocks are intruded and overlain by Mesoproterozoic igneous rocks of the Gawler Range Volcanics and co-magmatic Hiltaba Suite Granites.

Previous drilling within the tenement is limited to shallow reconnaissance holes for phosphate (max 50m deep). Drill holes in adjacent tenements targeting IOCG mineralisation in the basement are up to 500m long, where Gawler Range Volcanics were intersected (Figure 10).

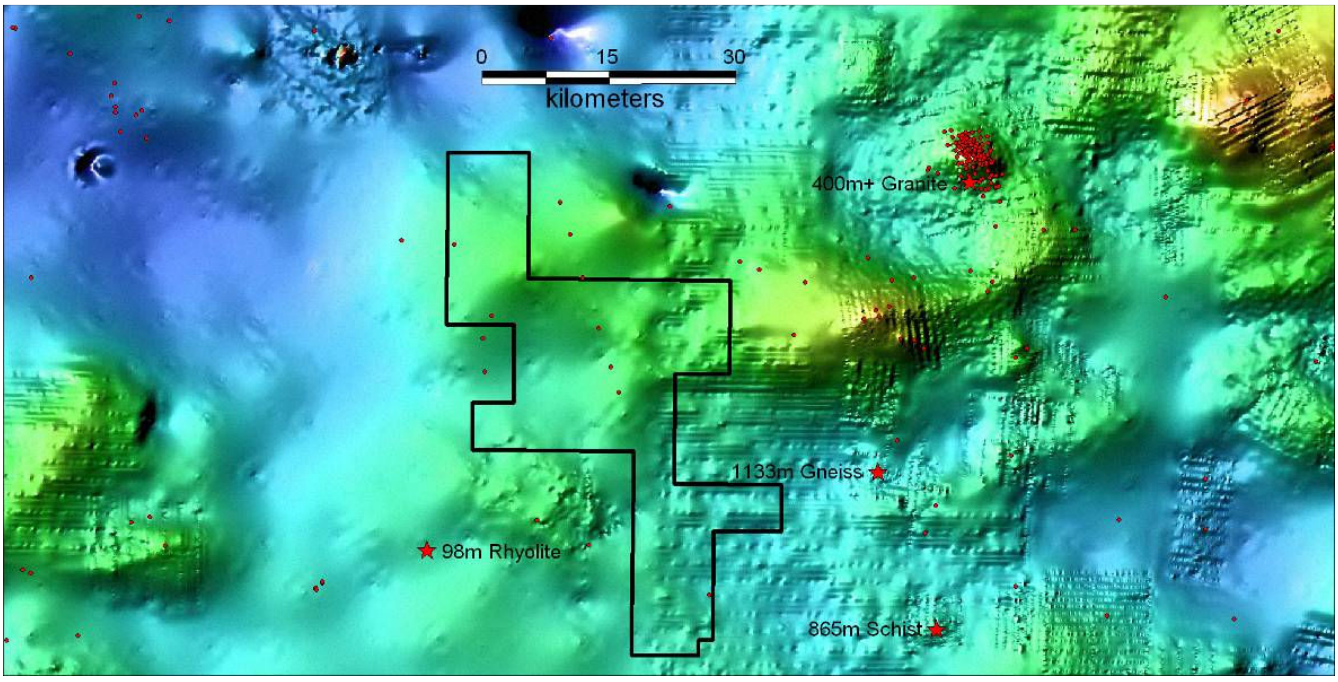

Figure 12: EL4930 pre-excision showing drilling on regional gravity

[holes intersecting basement = red stars]

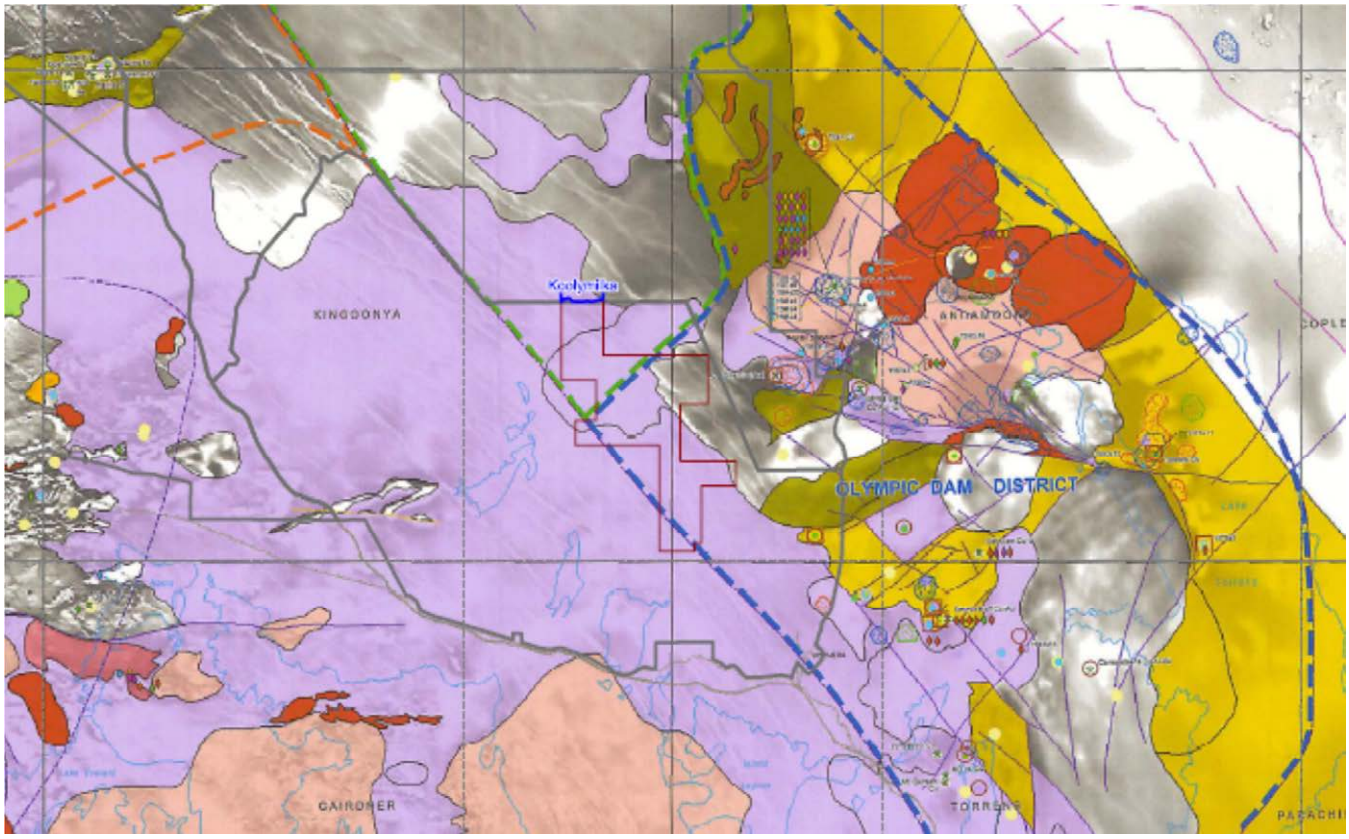

Figure 13: EL4930 on Gawler Craton IOCG Potential Map Extract
[from Geoscience Australia, First Edition 2006]

4.0 Exploration by Golden Cross

4.1 Year to 21 June 2013

Exploration activities undertaken during the current year included:-

- A review of previous exploration in each tenement area
- A review of available geophysics, targeting and ranking coincident magnetic and gravity anomalies

Geophysical Interpretation

Preliminary assessment of the regional geophysical data was undertaken by Adelaide Mining Geophysics [Jim Hanneson].

Further review is planned when new data become available at the end of 2013.

4.2 Expenditure Review to 21 June 2013

Expenditure to the end of Year 1 totals $20,362 including the three year period from application to grant, during which evaluation work was undertaken. Administration is excluded from this figure as Golden Cross no longer maintains an office in SA.

A deficit to guideline of $9,638 reflects access limitations for ground exploration.

Koolymilka - EL4930
22/06/2012 To 21/06/2013

Code	Account Name	Expense	Totals
20.00	**Tenement Management**		$580.00
20.14	Tenement Rental	$445.00	
20.15	Annual Admin Levy	$135.00	
48.30	**Travel and Accomodation**		$64.04
48.35	Accomodation/Food	$64.04	
48.40	**Vehicles**		$25.03
48.45	Empoyee Travel expenses	$25.03	
91.00	**Personnel**		$4,470.51
91.10	Wages & Salaries	$4,101.39	
91.20	Superannuation	$369.12	
92.00	**Geological Consultants**		$2,710.00
92.00	Consultants	$1,470.00	
92.10	Consultants - Drafting	$750.00	
92.20	Consultants - GIS	$490.00	
	Total:		$7,849.58

Table 2: EL4930: Exploration Activity & Expenditure – Year to 21 June 2013

5.0 Evaluation & Further Exploration

EL 4930 (Koolymilka) remains prospective because of proximity to geophysical anomalies that fit the IOCG model [but which are inside the Woomera Red Zone]. Adjacent exploration area is tightly held by other explorers including BHPB and FMG Ltd.

Viability of the tenement for exploration is compromised because of its reduced area, and effective exploration may only be possible in conjunction with adjoining programs.

Further evaluation of the geophysical data is awaiting release of infill gravity, expected towards the end of 2013.

GOLDEN CROSS OPERATIONS PTY. LTD.

ABN 88 050 212 827

A wholly owned subsidiary of Golden Cross Resources Ltd

22 Edgeworth David Ave
Hornsby NSW 2077
Phone (02) 9472 3500
Fax (02) 9482 8488

ANNUAL TECHNICAL REPORT
& FINAL REPORT
Year to 21 June 2014
EL 4930 KOOLYMILKA

Tenement Holder:	Golden Cross Operations Pty Ltd
Operator:	Golden Cross Operations Pty Ltd
Report Date:	22 August 2014
Author:	Edited by Bret Ferris

Report GCO767

Note: Prepared with reference to requirements in "Mineral Exploration Reporting Guidelines: A guide to the preparation and submission of technical reports for Exploration Licences in South Australia", prepared by PIRSA – Division of Minerals and Energy Resources.
Font is 12 pt Arial with 1.15 line spacing

Contents

Figures

Tables

1.0 Summary

Golden Cross Operations Pty Ltd commenced exploration activities in South Australia with the objective of discovering significant IOCG deposits with the potential to support a major mining operation. Golden Cross pegged six tenements in the Gawler Craton targeting Iron Oxide Copper Gold deposits, similar to Olympic Dam, Prominent Hill and Carrapateena. Each of these deposits has a variant of IOCG signatures - combinations of coincident magnetic and gravity anomalies caused by each deposit's unique geological setting, structure and mineralogy. The tenements lie within, or close to, the margins of O'Driscoll's G2 continental-scale structural corridor (Figure 1).

Evaluation progressively identified drill targets based on the intensity of gravity anomalies and the presence of coincident or adjacent magnetic features potentially indicating the presence of large volumes of hematite in major breccia zones hosting chalcopyrite – chalcocite – bornite mineralisation with associated gold, uranium and rare earth minerals.

ELA135-09 was lodged on 8 May 2009 and remained pending for 3 years until grant as EL4930 on 22 June 2012, when 97% of the area was excised due to overlap onto the Woomera Prohibited Area. The offer of a licence for the remaining area was accepted due to potential prospectivity associated with the flanks of a major regional gravity high inside the WPA.

During the year to 21 June 2014 further evaluation of the regional data was undertaken to assess the viability of the granted remnant EL4930. New government infill gravity data released in December 2013 was included in the evaluation.

Access issues for the small tenement area worked against further independent infill gravity, and the tenement was offered to adjoining explorers to achieve synergies with larger programs. Negotiations did not progress to a joint venture and the tenement was allowed to expire.

2.0 Introduction, History and Exploration Rationale

2.1 Location and Access

EL4930 is approximately 50 km west of Olympic Dam on the northern edge of the Woomera Prohibited Area Continuous Use Zone [“Red Zone”].

Access to the area is provided by the Woomera – Roxby Downs Road, and station tracks . Most unsealed roads are closed after rainfall exceeding 10mm.

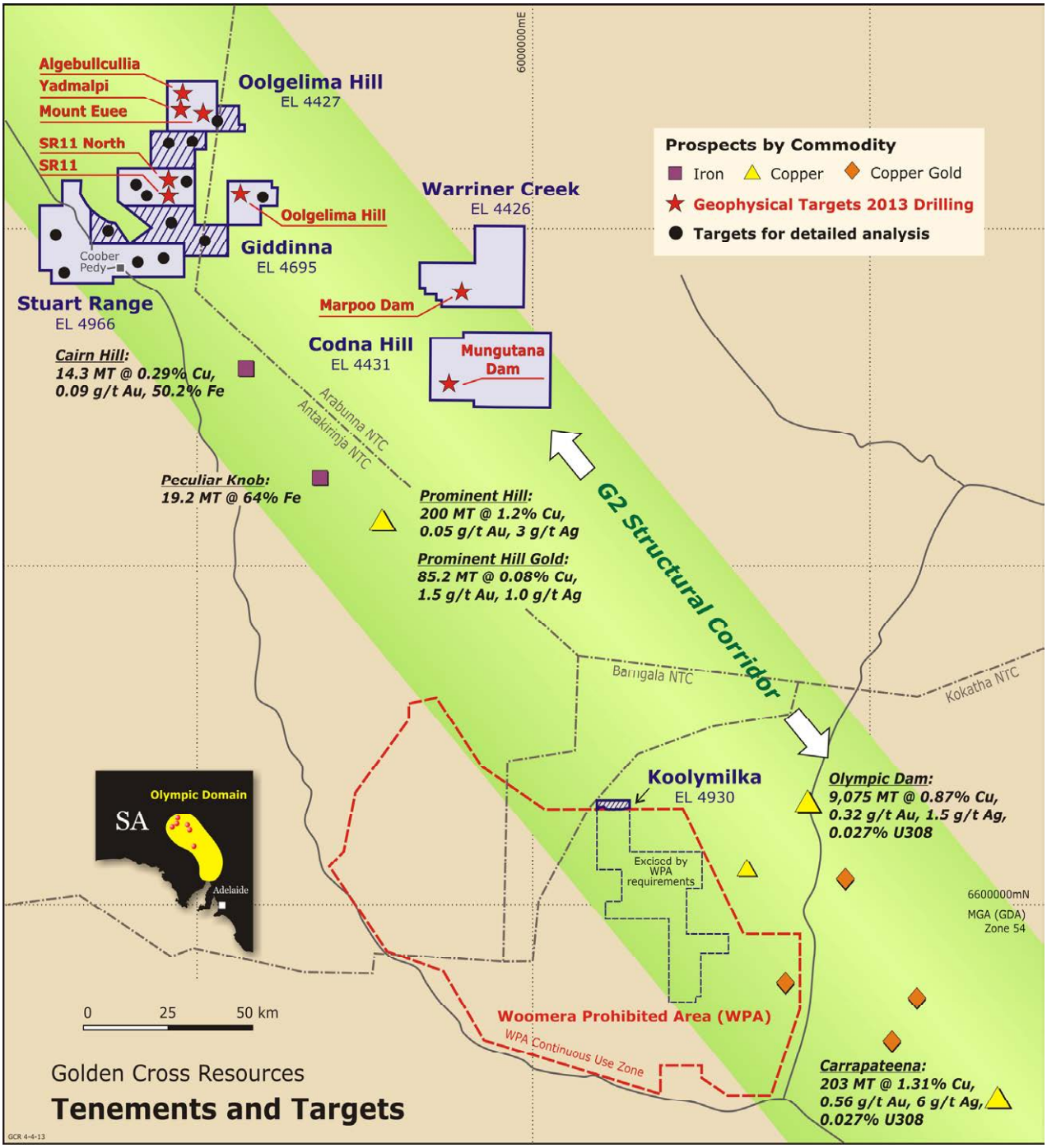

Figure 1: GCR IOCG tenements

[showing known deposits , Native Title boundaries & Woomera Continuous Use Zone.

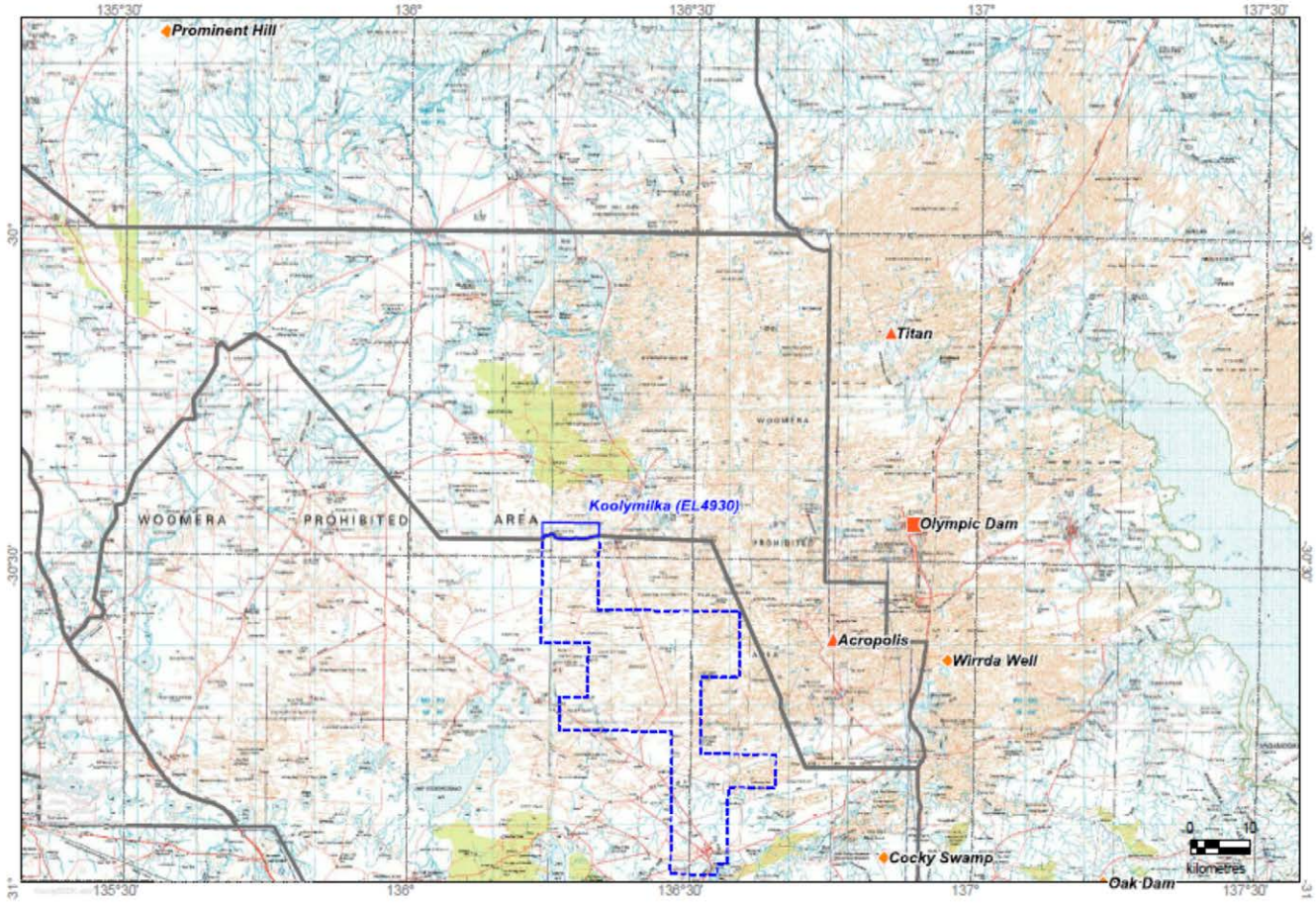

Figure 2: EL4930 Location
[showing copper/gold deposits]

2.2 . Tenement Details

ELA135-09 was lodged on 8 May 2009 over 926 sq. km.

On 5 May 2011 the 2010 Final Report on access to the WPA was accepted by Government agencies and on 1 December 2011 Golden Cross was notified that 97% of the application area, that part inside the Woomera Red Zone, would be excised, leaving 24 sq.km of the original 926 sq.km for grant on 22 June 2012.

A Moratorium on access agreements with Woomera Prohibited Area was in place at the time of grant. New WPA procedures were announced 5 October 2012, and a 5 year Access Deed signed off by all parties on 18 December 2012.

TENEMENT PROJECT NAMES	Area sq.km	APP DATE	ELA	TEN #	HOLDER	GRANT DATE Original	EXPIRY DATE
Koolymilka	24	8-May-09	*135-09*	**4930**	GCO	22-Jun-12	22-Jun-14

Table 1: EL4930 Tenement Details

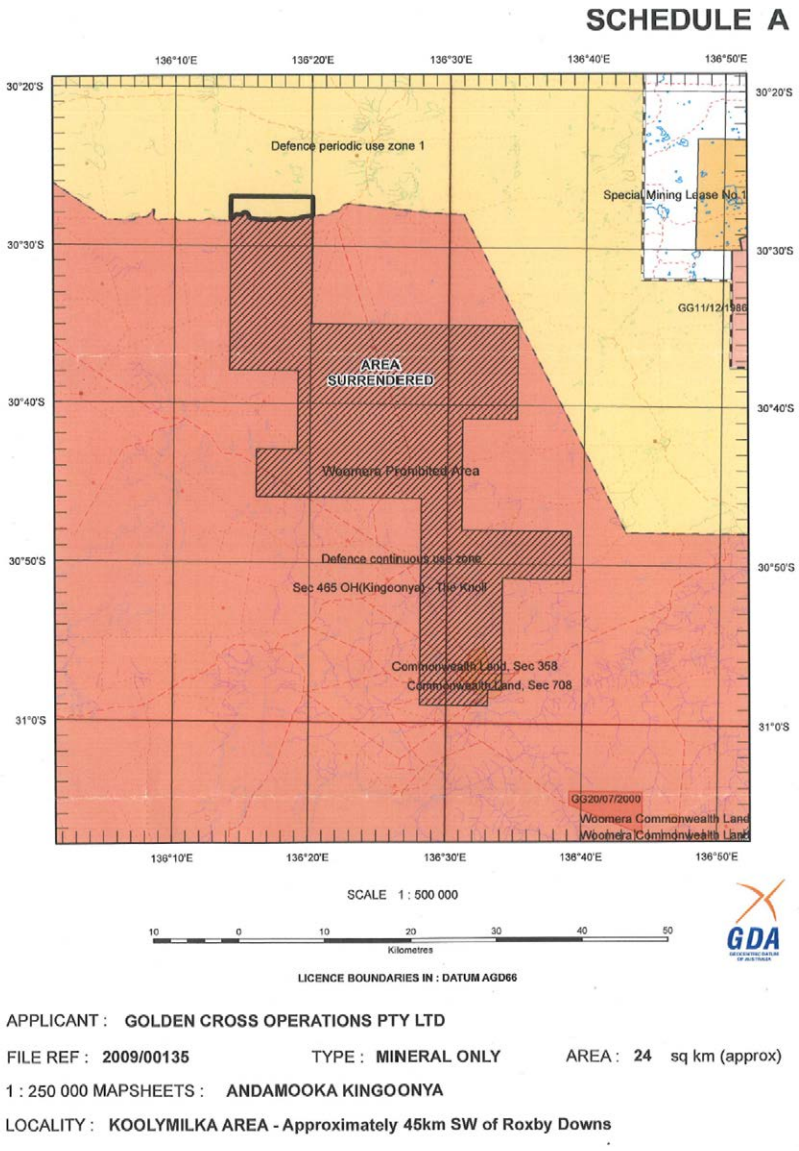

Figure 3: EL 4930 Application Configuration

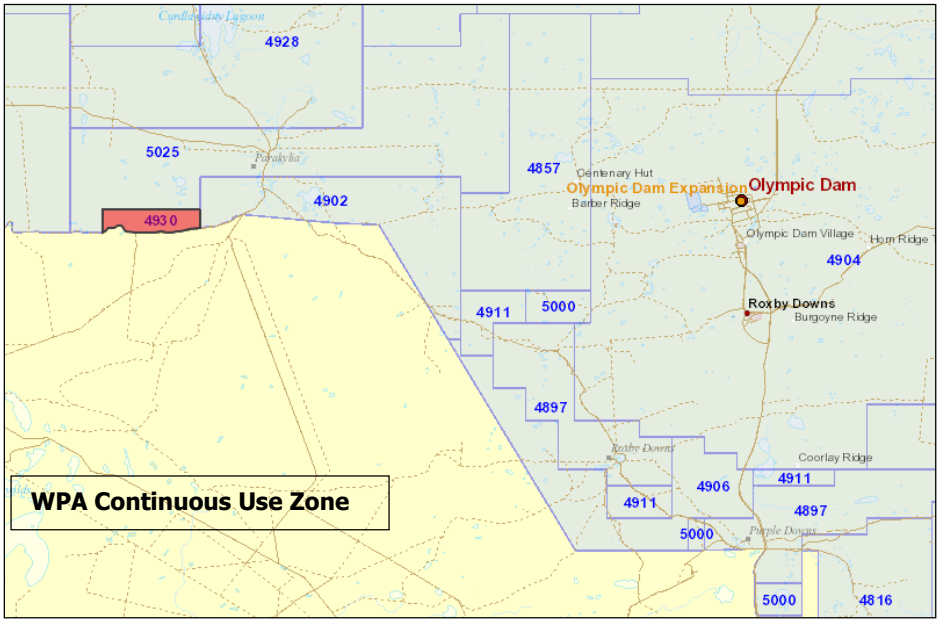

Figure 4: EL 4930 from 22 June 2012

2.3 . Land Access

EL4930 is on Parakylia Pastoral Station, and within Native Title Claim SC2009/001 on behalf of the Kokata Unwankara, which remains to be determined.

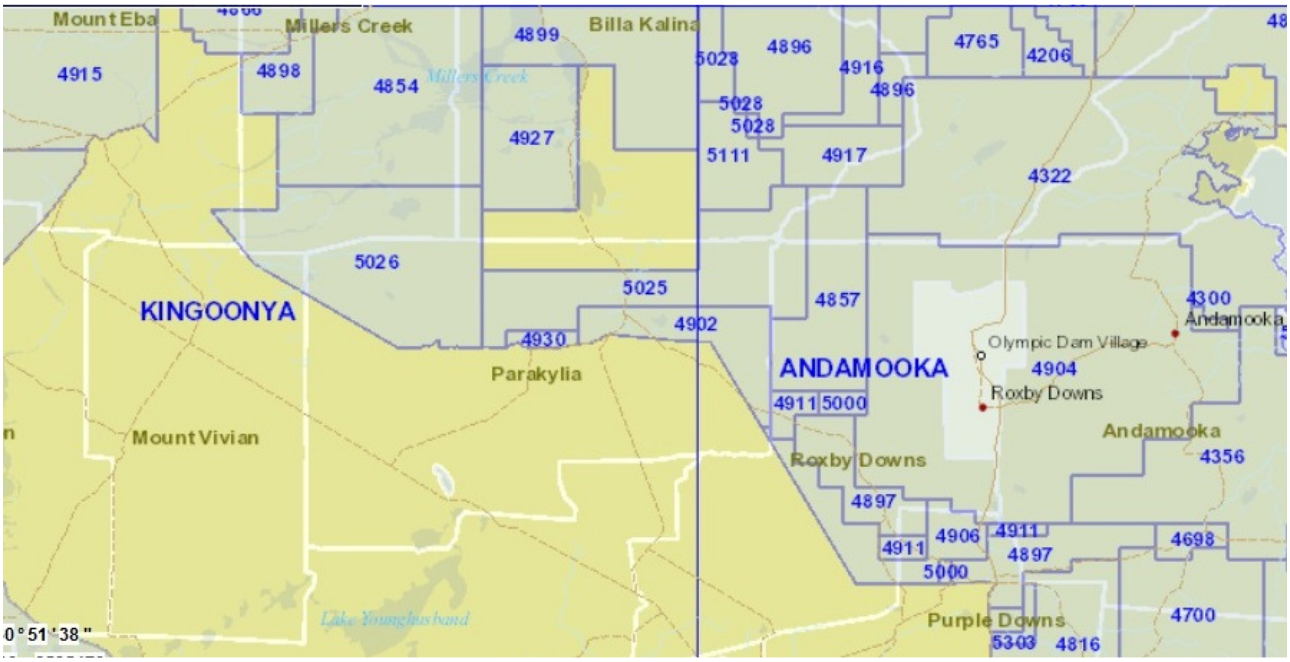

Figure 5: EL 4930 Landholders

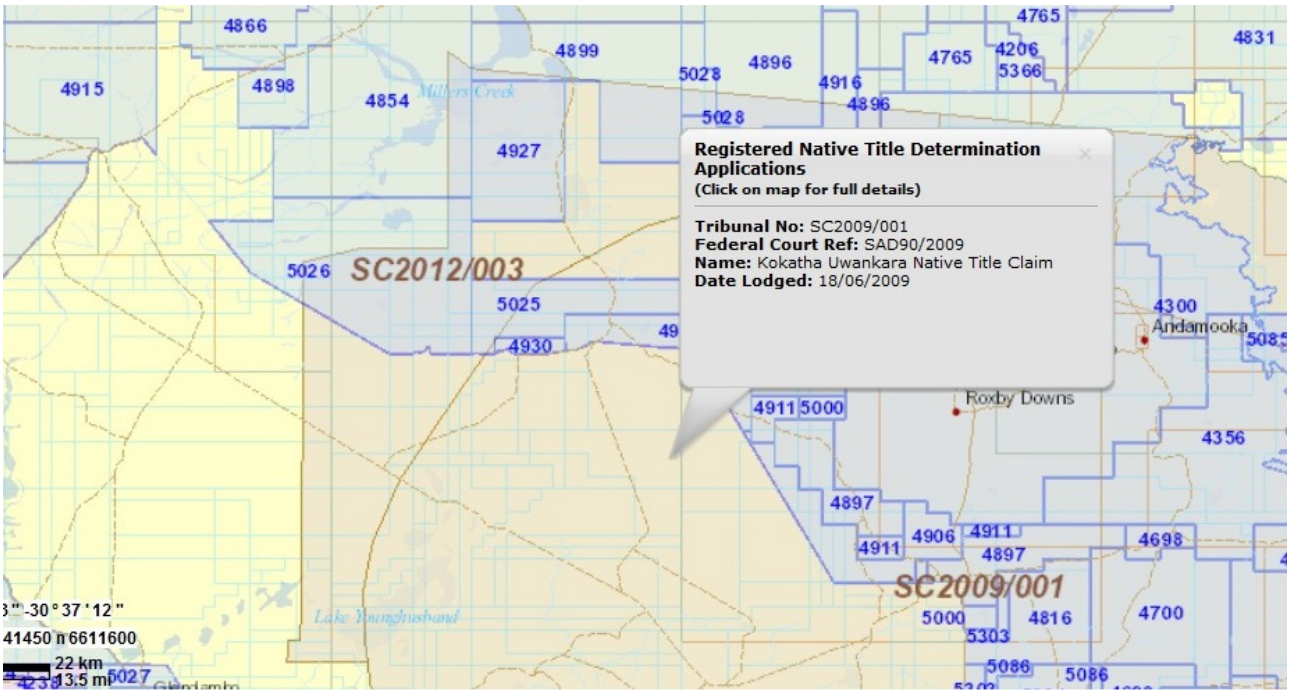

Figure 6: EL 4930 Native Title Claims

2.4. Exploration History

1976 Dampier Mining – Near-surface phosphate exploration associated with the Andamooka Limestone. A 9 hole rotary drilling programme was carried out to test a possible basin structure.

1979 Australian Selection – Targeted IOCG mineralisation by following up indications of stratabound lead and zinc mineralisation previously intersected by Australian Selection. Ground magnetic and gravity surveys were undertaken over the Portulacca aeromagnetic anomaly (south of the current ELA area) and three percussion holes drilled (total 730m) to test stratigraphic and geophysical targets; basement was not reached. Ground was relinquished where depth to basement was estimated to be in excess of 1000m.

1982 Seltrust Mining – Undertook several ground gravity surveys, including one over the Portalucca anomaly which occurs within the current Koolymilka ELA, before focusing on the Eucolo anomaly to the south of Koolymilka. Percussion drilling was completed to assess the stratigraphy of the cover sequence, with elevated Zn and Pb in the basal Tapley Hill Formation, but geophysical reviews suggested Eucolo did not have 'the Olympic Dam style geophysical signature' and no further work was undertaken.

Regional depth to basement estimates within the Portalucca tenement inferred a depth of cover sediments in excess of 1000m, with the exception of Eucolo wher a depth of 500-800m was estimated.

1982 Esso Exploration – Drilled coincident magnetic-gravity anomaly to the southeast of EL4930 and intersected Gawler Range Volcanics. While the magnetic target was not fully explained, the tenement was relinquished on the lack of copper mineralisation observed in the core (no assays).

In a separate tenement, Esso also undertook ground magnetic and infill and detailed gravity surveys, and Maxi-Probe ground EM soundings on two grids near Beddome Hill, within the current ELA area. The target was a 4-6mgal regional gravity high thought to be associated with buried Olympic Dam or Acropolis type IOCG deposits. Modelling of the geophysics gave an inconclusive estimate for depth to basement and no firm encouragement was provided to initiate drill testing.

Esso also undertook gravity surveys and ground magnetics over a regional gravity anomaly 15km south of the Parakilya homestead (to the north of EL4930). Geophysical modelling indicated that an elongate anomaly is fault bounded to the north and may lie at less than 750m depth.

1983 MIM - MIM held a tenement southeast of EL4930, extending as far as Woomera. Ground magnetic and gravity surveys were undertaken over the Buller Dam anomaly on the western flank of the Acropolis anomaly. A percussion/core hole PPR5/SAP1 was drilled at Buller Dam but terminated in Pandurra Formation at 1369m; basement was not reached. MIM also flew geophysical surveys over the Eucolo and Portalucca anomalies and modelling suggested that the source depth of the gravity anomaly was 1000m and 300m for the magnetic anomaly. It was suggested that this might represent a magnetic horizon in the Gawler Range Volcanics with denser basement below the volcanics. No drilling was undertaken at this anomaly.

2.5 Exploration Targets, Objectives and Rationale

Interest in the areas was initiated at the SAREIC Conference in Adelaide on 5-6 May 2009 when a paper presented by Laz Katona, “GIS Mapping, 3D Models & IOCG Potential Mapping”, highlighted many coincident or related regional magnetic and gravity highs some of which were over vacant land.

Each of the known IOCG deposits, Olympic Dam, Prominent Hill and Carrapateena has unique variants of geophysical magnetic and gravity signature, which are now the target of exploration elsewhere.

Exploration is planned to systematically evaluate selected coincident magnetic and gravity anomalies, in prospective structural settings, by the application of appropriate geophysical techniques prior to testing by drilling programs.

Most of the tenement has not been covered by detailed gravity surveys. Only the eastern margin has been included in a ground-based gravity survey at 1km spaced intervals (Fig 5).

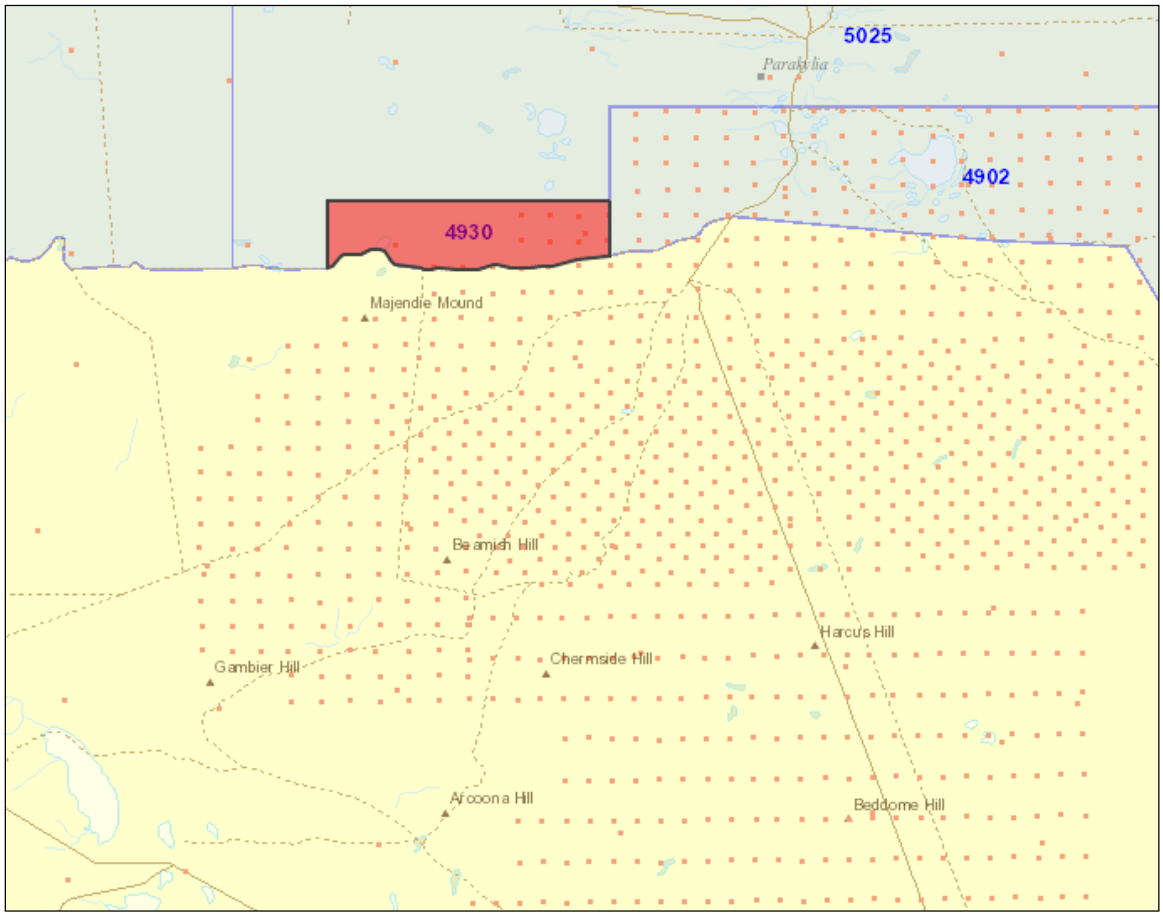

Figure 7: Gravity Station Locations 2012

[see 2013 image in Figure 14]

3.0 Geologic Setting

3.1 Gawler Craton Geology

The Gawler Craton covers approximately 440,000 sq km of central South Australia. Basement rocks consist of the Archaean-Palaeo-proterozoic **Sleaford Complex** (exposed in the southern Gawler Craton) and the **Mulgathing Complex** (exposed in the west and north). Both consist of ortho- and paragneiss metamorphosed to granulite facies and were deformed by the Sleafordian Orogeny (~2400 Ma).

Palaeo-proterozoic rocks overlie the Archaean core to the north and east of the craton and include metamorphosed marine shelf sediments of the **Hutchinson** and **Wallaroo Groups** (onlap basins 2000 – 1650 Ma), which are intruded by granitoids of the **Donnington** and **Moody Suites**, mafic dykes and younger metasediments and felsic volcanics. Palaeo-proterozoic sediments were deformed by the 1670-1640 Ma **Kimban Orogeny**.

The Meso-proterozoic Gawler Range Volcanics form a felsic volcanic province in the central Gawler Craton where there is extensive outcrop. **Hiltaba Suite** granites are co-magmatic with the **Gawler Range Volcanics** and are dominated by felsic granite plutons which are characteristically pink from hematite staining of the feldspar crystals. These host the Olympic Dam deposit and other known IOCG deposits within the Gawler Craton. The Hiltaba Suite granites and the Gawler Range Volcanics possibly represent partially melted crust over a mantle plume and are also generally believed to be the source for IOCG mineralisation within the Craton. A stratigraphic column of the basement rocks is shown in Figure 8.

The basement rocks are unconformably overlain by thick sequences of Adelaidean sediments which typically include Corunna Conglomerate, Pandurra Formation red beds, Tapley Hill Formation Siltstone, Whyalla Sandstone, Arcoona Quartzite and Tregolana Shale.

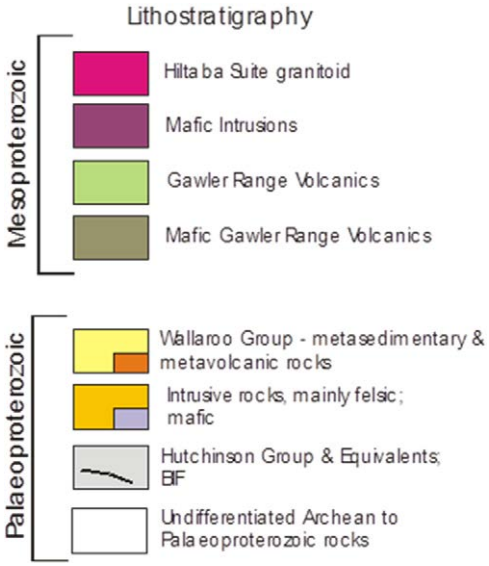

Figure 8: Lithostratigraphy: Gawler Craton Basement

3.2 Gawler Craton Mineralisation

The Gawler Craton hosts the Olympic Dam Cu-U-Au-REE deposit discovered by WMC in 1975; but it was not until 2001 that the Prominent Hill was discovered, followed by Carrapateena in 2005.

IOCG deposits within the Gawler Craton are hosted by basement rocks that underlie substantial thicknesses of sedimentary cover. They have a strong spatial association with the Gawler Range Volcanics and Hiltaba Suite granite forming part of a >500km long metallogenic province along the eastern margin of the Craton (**Figure 7**). Other mineral occurrences within this Olympic Cu-Au Domain include Oak Dam, Acropolis, Wirrda Well and Emmie Bluff. The Olympic Domain also includes the Mt Woods Inlier, which hosts Prominent Hill.

The Moonta Subdomain forms the southern part of the Olympic Cu-Au province. Historic production comprises over 330,000 tonnes of Cu from vein and shear-hosted mineralisation in the Moonta-Wallaroo district. The domain basement comprises metasediment and metavolcanics of the Palaeo-proterozoic Wallaroo Group which were deformed and metamorphosed to upper greenschist-amphibolite facies during the Kimban Orogeny. Hiltaba Suite granites and mafic intrusions intruded between 1600Ma and 1575Ma.

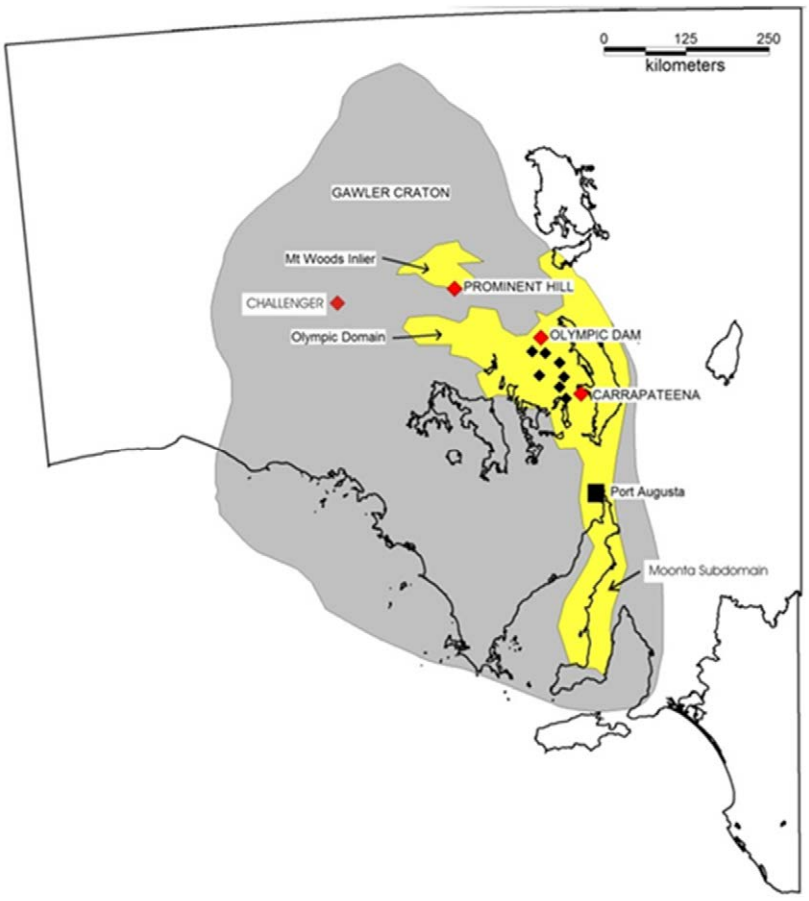

Figure 9: Location of the Olympic Domain, Mt Woods Inlier & Moonta Subdomain

The IOCG deposits have been interpreted to have formed in an orogen-parallel zone controlled by the intersection of significant orogen-parallel structures and oblique

structures. The state aeromagnetic data (Figure 8) shows cratonic zones and mobile belts, defining domain boundaries and cross-cutting structures (Figure 9).

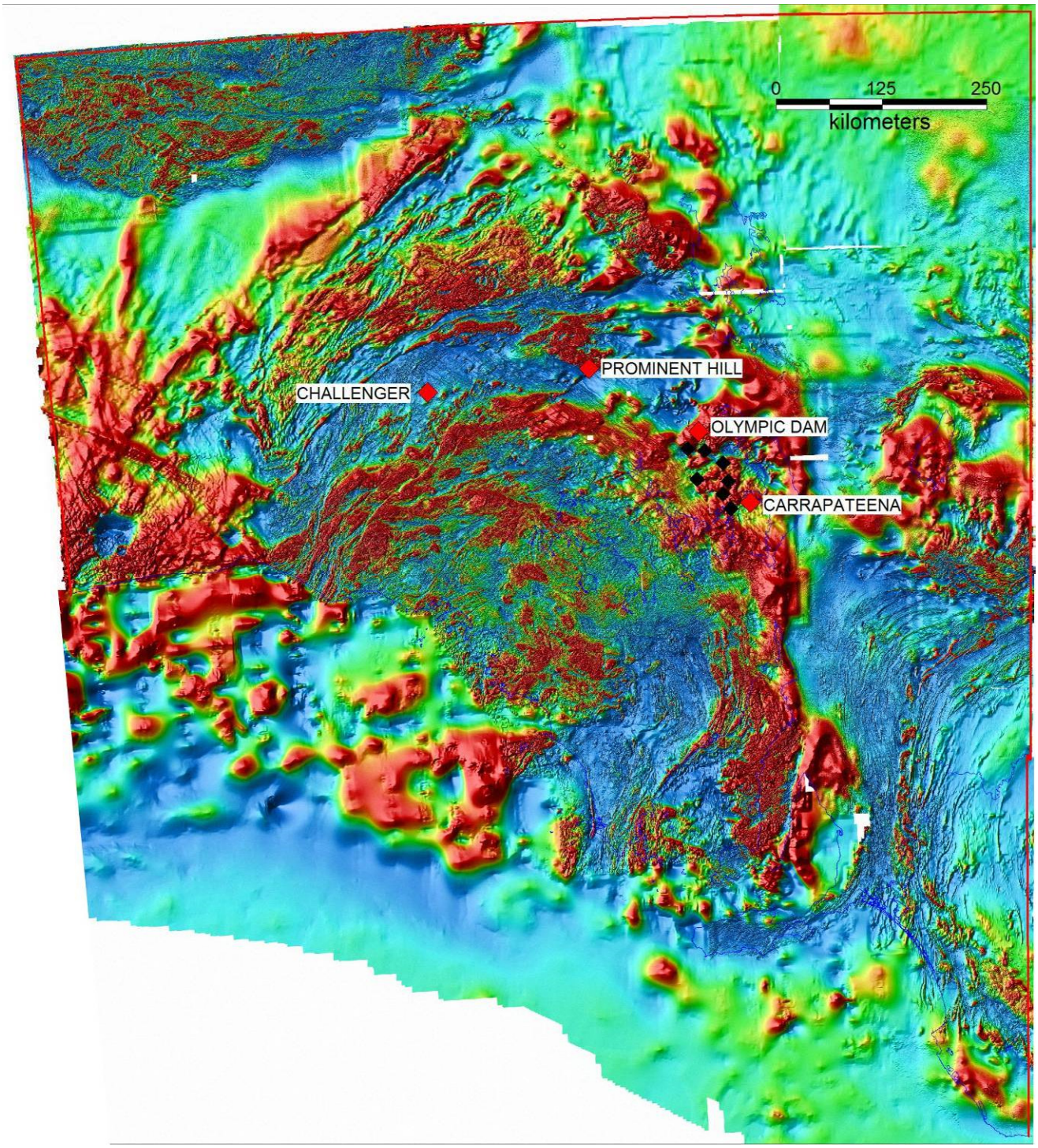

Figure 10: SA TMI Image showing major IOCG deposits

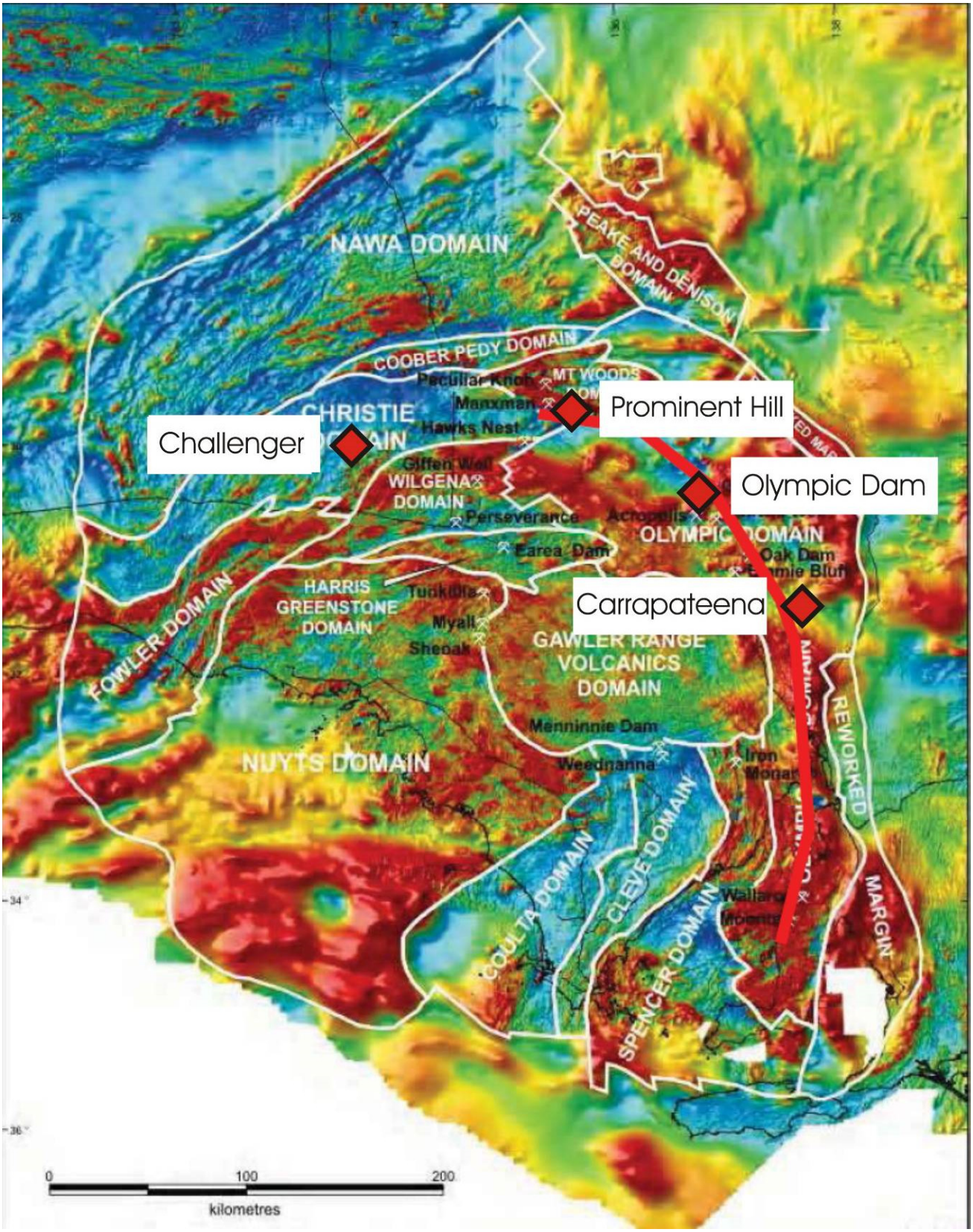

Figure 11: GawlerTectonic Domains & major IOCG deposits on TMI.

3.3 Geology of EL 4930

EL4930 is 50km west of Olympic Dam, in the northwestern section of the Olympic structural and mineralisation domains. It is on the eastern margin of the Cariwerloo Basin into which Mesoproterozoic Pandurra Formation sediments were deposited. The Palaeoproterozoic basement is interpreted to consist of Donnington Suite granitoids, Hutchinson Group metasediments. These older country rocks are intruded and overlain by Mesoproterozoic igneous rocks of the Gawler Range Volcanics and co-magmatic Hiltaba Suite Granites.

Previous drilling within the tenement is limited to shallow reconnaissance holes for phosphate (max 50m deep). Drill holes in adjacent tenements targeting IOCG mineralisation in the basement are up to 500m long, where Gawler Range Volcanics were intersected (Figure 10).

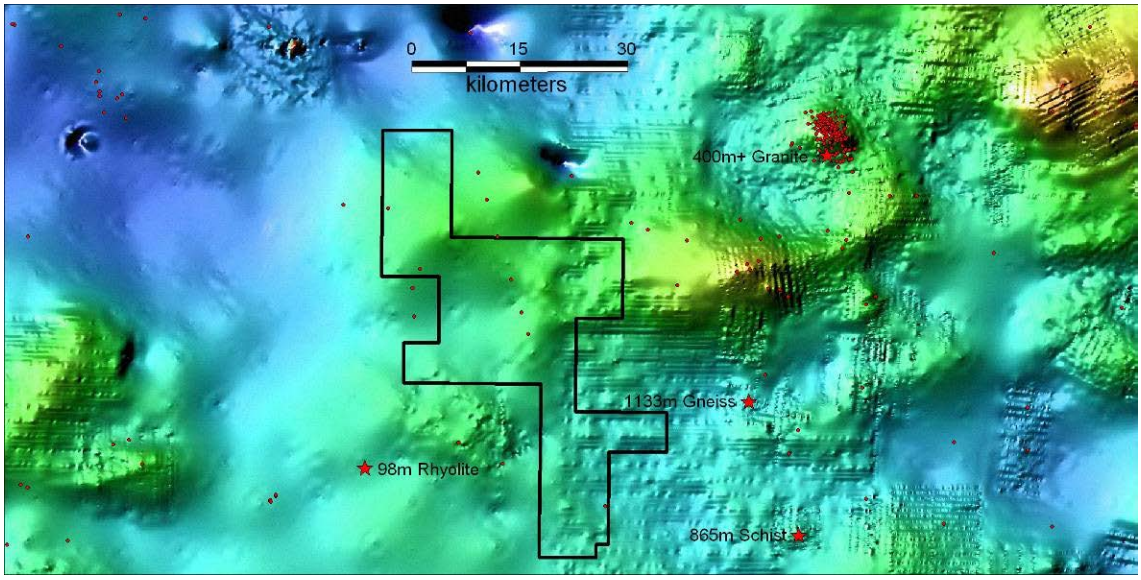

Figure 12: EL4930 pre-excision showing drilling on regional gravity [holes intersecting basement = red stars]

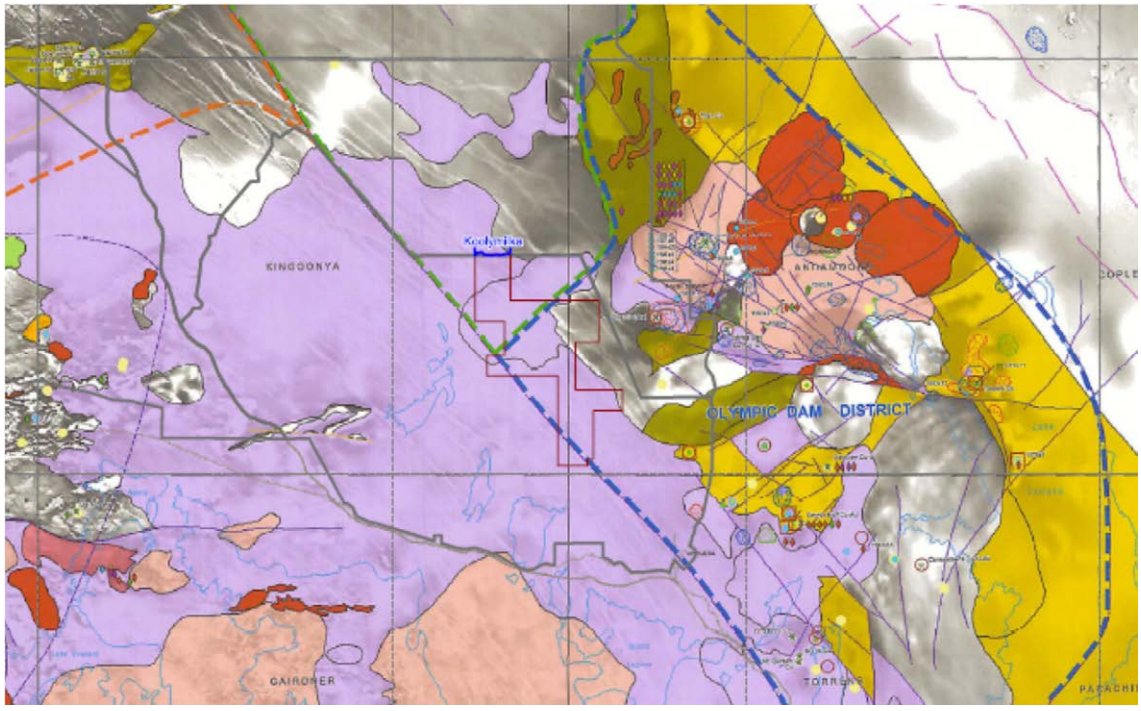

Figure 13: EL4930 on Gawler Craton IOCG Potential Map Extract
[from Geoscience Australia, First Edition 2006]

4.0 Exploration by Golden Cross

4.1 Year to 21 June 2013

Exploration activities undertaken during the current year included:-

- A review of previous exploration in each tenement area
- A review of available geophysics, targeting and ranking coincident magnetic and gravity anomalies

Geophysical Interpretation

Preliminary assessment of the regional geophysical data was undertaken by Adelaide Mining Geophysics [Jim Hanneson].

Further review is planned when new data become available at the end of 2013.

4.2 Year to 21 June 2013

In December 2013, new infill data from government surveys was released. The new regional data were reviewed [Figure 14], however the main areas of interest remained inside the “Woomera Red Zone”, and with access to these area unlikely for some time, the tenement was allowed to expire.

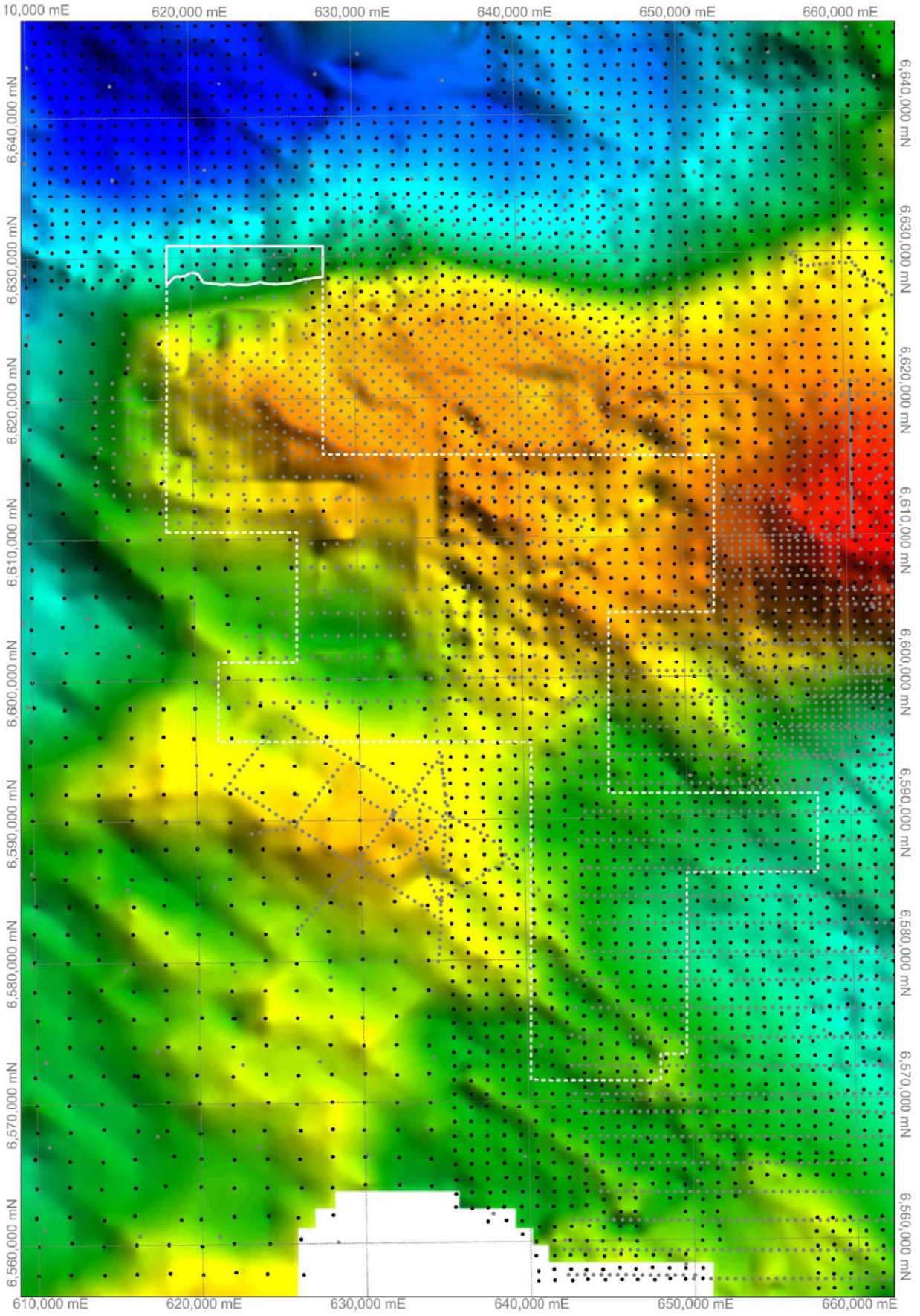

Figure 14: EL4930: 2013 Regional Gravity Stations
[previous regional data stations in grey]

4.3 Expenditure Review to 21 June 2014

Expenditure to the end of Year 2 totals $32,348 including the three year period from application to grant, during which evaluation work was undertaken. Administration is excluded from this figure as Golden Cross no longer maintains an office in SA.

A deficit to guideline of $27,652 reflects access limitations for ground exploration, and the unviable size of the granted tenement.

Koolymilka - EL4430
22/06/2013 To 21/06/2014

Code	Account Name	Expense	Totals
20.00	**Tenement Management**		-
20.14	Tenement Rental	-	
20.15	Annual Admin Levy	-	
48.30	**Travel and Accomodation**		32
48.32	Travel expenses - Consultants	32	
48.40	**Vehicles**		-
48.45	Travel expenses	-	
91.00	**Personnel**		3,047
91.10	Wages & Salaries	2,789	
91.20	Superannuation	258	
92.00	**Geological Consultants**		8,997
92.05	Consultant Exploration Manager	6,300	
92.10	Consultants - Drafting	1,017	
92.20	Consultants - GIS	1,680	
	Total:		12,076
	10% Administration		1,208
	Grand Total:		13,284

Expenditure Reconciliation	EL4930 Koolymilka		Six Months Figs		Year
Period	Grant 22 Jun 2012		Six Months	Direct$	Direct$
Inception to 21 Jun 12				$12,512	$12,512
Year 1: 22 Jun 12 to 21 Jun 13	$30,000	1	22Jun12-21Dec12	$1,429	$7,850
		2	22Dec12-21Jun13	$6,421	
Year 2: 22 Jun 13 to 22 Jun 14	$30,000	3	22Jun13-21Dec13	$8,050	$12,076
		4	22Dec13-21Jun14	$4,026	
Life of Tenement	**$60,000**			**$32,438**	**$32,438**

Table 2: EL4930: Exploration Expenditure Details

5.0 Evaluation & Further Exploration

EL 4930 (Koolymilka) remains prospective because of proximity to geophysical anomalies that fit the IOCG model [but which are inside the Woomera Red Zone]. Adjacent exploration area is tightly held by other explorers including BHPB, FMG Ltd and Monax/Antafagusta Alliance.

Viability of the tenement for exploration is compromised because of its reduced area, and effective exploration may only be possible in conjunction with adjoining programs.

Discussion with adjoining explorers to allow synergies from joint exploration did not progress to a joint venture and the tenement was allowed to expire.