



# QUARTERLY REPORT

Ending 31 December 2015

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## HIGHLIGHTS:

### Upgraded Paris silver resource underpins growing silver, copper/gold & nickel potential in Investigator's South Australian tenements

#### 1. Revised Paris Resource estimate - 60% increase to 33Moz silver:

- 8.8Mt @ 116g/t silver (50g/t silver cut-off)
- Internal studies on a shallow open-pit scenario, coupled with positive metallurgical tests<sup>1</sup>, demonstrate a strong economic scenario for further development
- Further resource upgrade and development options being considered.

#### 2. Associated skarn & porphyry copper targets prepared for drilling near Paris:

- Heritage survey clears high-priority Nankivel copper targets for drill access
- In wider mineral system extending from Paris
- Drilling proposed in June quarter as candidate for upcoming PACE government funding.

#### 3. Extensive nickel potential firms on Eyre Peninsula:

- Diomedes (near Paris) - petrology on prior shallow drill samples identified nickel sulphides in widespread basement ultramafics of possible Archaean age
- The likelihood of further new nickeliferous areas is being assessed across the Uno Province.

#### 4. Revitalised IOCG potential secured along southern Olympic Dam corridor:

- Imminent grant of 2,372km<sup>2</sup> of new tenements
- Extension to IOCG corridor mapped by new government geophysical survey
- Review underway of past drilling and geophysical data for untested IOCG targets.

<sup>1</sup> Investigator ASX Release: 21 October 2013

# OVERVIEW AND OUTLOOK SUMMARY

Investigator continued its active exploration of the southern Gawler Craton where major breakthroughs with the understanding of the poorly exposed geology are offering strong re-ratings of the mineral potential. This was initially demonstrated by the Company's Paris silver discovery in 2011/12 that has led to the concept of the Uno epithermal/porphyry province across northern Eyre Peninsula. Investigator is building on that potential with research, flow-on ideas and opportunities for copper/gold and now nickel throughout the province. The Company was accordingly primed to respond to recent innovative government geophysical surveys that indicated a deep structural magneto-telluric ("MT") corridor connecting the Uno epithermal and Olympic Dam IOCG provinces (Figure 1). The Company applied for much of the ground over the MT corridor between the provinces for the revitalised potential for undrilled IOCG or hybrid copper deposits.

Activity during the Quarter comprised:

- **Paris silver project** - The completion and reporting of the independently-prepared estimation for the Inferred Mineral Resource based on increased confidence in the geological model.
- **Surrounding Peterlumbo tenement** - Remapping, petrology and on-going interrogation of the Company's drill, geochemistry and geophysics research platform to model the porphyry/skarn copper targets in the Paris-Nankivel mineral system and the basement nickel targets.
- **Nankivel copper skarn and porphyry targets** - A heritage survey was completed that secured previously unavailable drill access for the high-priority copper targets.
- **Thurlga JV** - Infill soil sampling of silver targets as potential additions to the nearby Paris silver project.
- **MT Corridor tenement applications** - A review of past drill and geophysical data commenced ahead of tenement grant to seek untested IOCG targets at drillable depths.

Expenditure for the December Quarter comprised A\$0.46million spent on exploration and A\$0.27million spent on corporate and administration costs. The Company held A\$1.71million in cash at the end of the December 2015 Quarter. Claims have been lodged for a 2014/15 R&D Tax Concession of A\$0.95million and a South Australian Government co-fund of A\$100,000 for the Company's 2015 drilling under the PACE collaborative drilling scheme.

Investigator Resources Managing Director John Anderson said "Investigator achieved its quarterly goals of:-

- 1) Producing the upgraded resource for the Paris silver project;
- 2) Preparing the exciting Nankivel copper targets nearby for drill testing in 2016;
- 3) Advancing the breakthrough nickel story on the northern Eyre Peninsula; and
- 4) Securing new IOCG discovery opportunities arising from innovative government research & surveys.

The Paris resource result strengthens our key asset with a 60% increase in contained silver to 33Moz while maintaining a strong grade. We continue to scope the work needed to move the resource to Indicated status as well as development options.

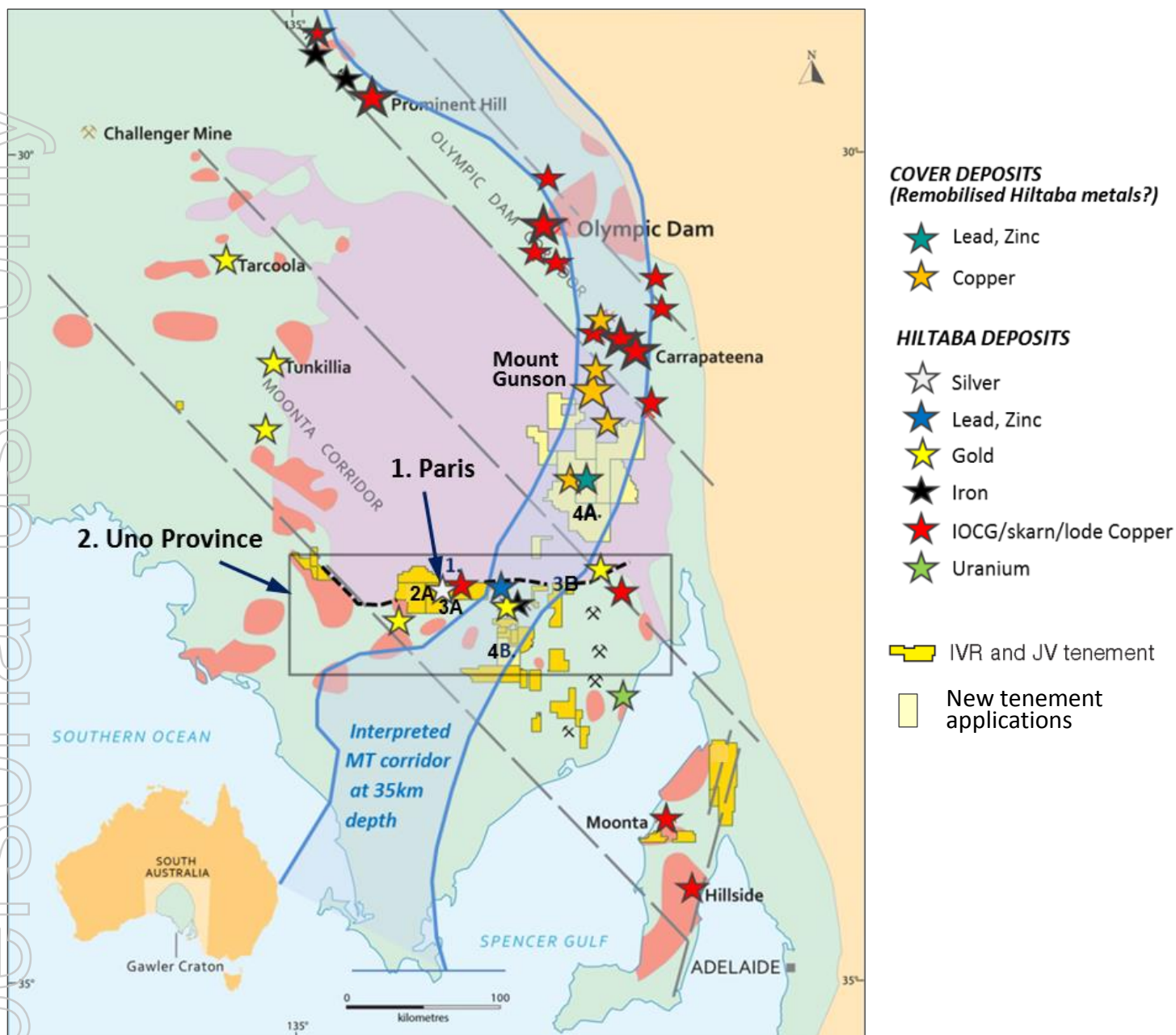
Investigator is using its extensive datasets and know-how to efficiently evaluate the emerging porphyry copper and Archaean nickel potential in the Uno Province.

We have also grasped a step-change IOCG opportunity arising from government surveying with innovative geophysical technology being rolled out across Australia. The interpretation that the survey has mapped a connecting corridor between the Olympic Dam and Uno Provinces is based on early results. However, it has the potential to kick start the next generation of copper discoveries in South Australia and Investigator is taking a lead position by acquiring ground in the new corridor. Undiscovered IOCG, porphyry or hybrid copper deposits in the transition between the Olympic Dam and Uno Provinces may fill the oft-mentioned lack of large copper deposits between the super-giant Olympic Dam deposit and the other smaller IOCG deposits in the Gawler Craton.

Although Investigator's priority is moving the Paris silver project towards development to provide a cash flow, the Company continues to aggressively pursue the cascade of larger opportunities it is developing in the wider region and is considering options to fund these. On-going avenues are collaborative research and co-funding from the State Government that are always welcomed. In addition, partnering on our regional ideas and projects will be actively pursued to drive Investigator through 2016 and produce tangible results to strategically position our Company for the next upturn." Mr Anderson added.



# OVERVIEW AND OUTLOOK SUMMARY



- Paris silver project - 2015 revised resource (33Moz silver)**
- Concept of Uno Province with shallow epithermal deposits & associated skarn/porphyry copper of near Olympic Dam age:**  
Including - **2A:** Nankivel drill-ready copper targets near Paris
- Nickel potential in Hiltaba mafic intrusives & extensive Archaean? basement:**  
including - **3A.** Diomedes nickel sulphide ultramafics near Paris  
**3B.** Uno/Morgans chromite quartzites near 3.15bn year granites
- Breakthrough Magneto Telluric (MT) research: re-interpreted corridor connecting Olympic Dam with Uno Province prompted new tenement applications:**  
**4A.** Extensions to OD corridor under Stuart Shelf  
**4B.** Fairfield

**Figure 1: Southern Gawler Craton**

Regional location map showing Investigator's key concepts, development & discovery opportunities

**Peterlumbo Tenement** (EL5368) (IVR 100%) [Refer to Figures 1 to 7 and 11]:

## **Paris Silver Project:**

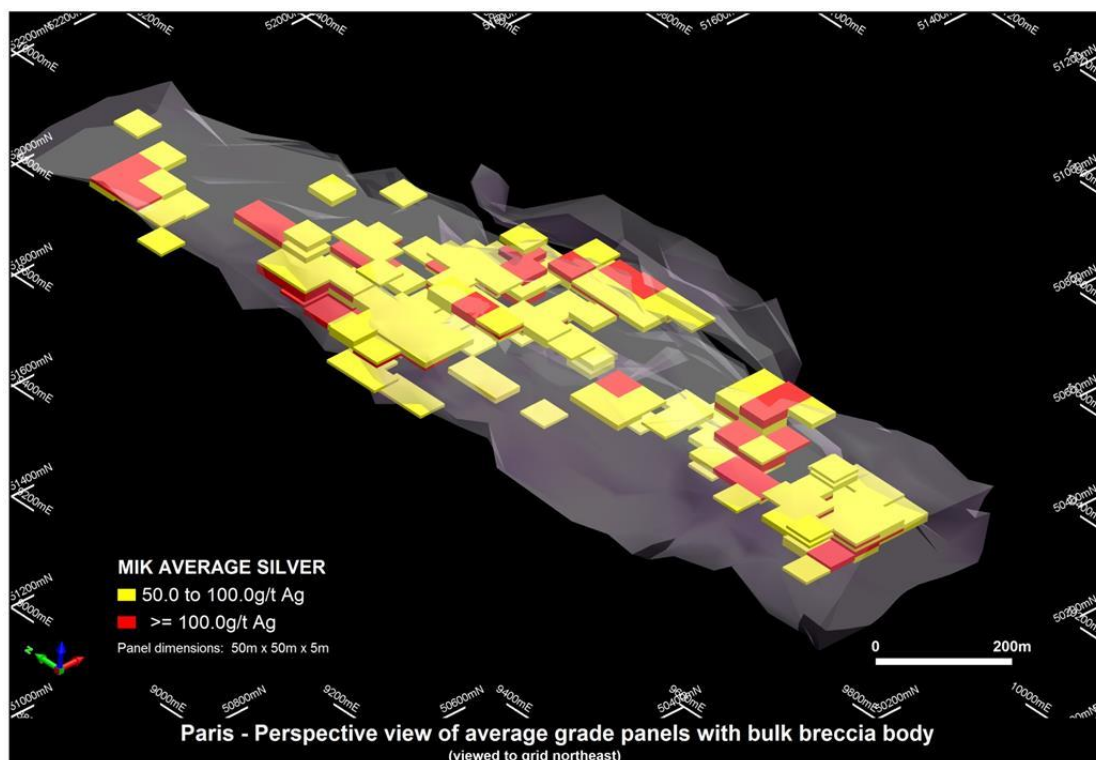
The main outcome of the December quarter was the release of the revised Paris Silver Resource. The Paris Silver Inferred Mineral Resource estimate was upgraded to 8.8Mt @116g/t silver containing 33Moz silver (at a 50g/t silver cut-off) (Investigator ASX Release: 9 November 2015). This is a 60% uplift in the contained silver on the 2013 maiden Inferred Mineral Resource of 20Moz (Investigator ASX Release: 15 October 2013). The mineral resource is classified as Inferred due to the lack of grade continuity associated with both the relatively wide drillhole spacing and the localised high-grade samples typical with this style of breccia deposit.

The upgrade was made possible by adding some of the northern extensions drilled after the maiden resource in 2013, but primarily through the increased confidence in the geological model. This enabled the fresh geostatistical approach to better model the mineralisation for the high-grade zones and the margins, while not imposing any preconception about open-pit designs.

The revised Inferred Mineral Resource was independently prepared by H & S Consulting Pty Ltd ("H&SC"), in Brisbane using the Multiple Indicator Kriging ("MIK") method which is suitable for the complex mineralisation style of the Paris silver deposit. It has been estimated and reported in accordance with the guidelines of the 2012 edition of the Australasian Code for the Reporting of Exploration Results, Minerals Resources and Ore Reserves.

The Paris silver mineralisation is distributed between the surface and about 160m depth within a flat elongate clay-altered breccia body that extends over nearly 1.5km in length (Figure 2). Investigator considers the dominant soft host rock and shallow depth of the Paris deposit offers attributes for an open-pit operation; H&SC have modelled and classified the resource in accordance with that assumption.

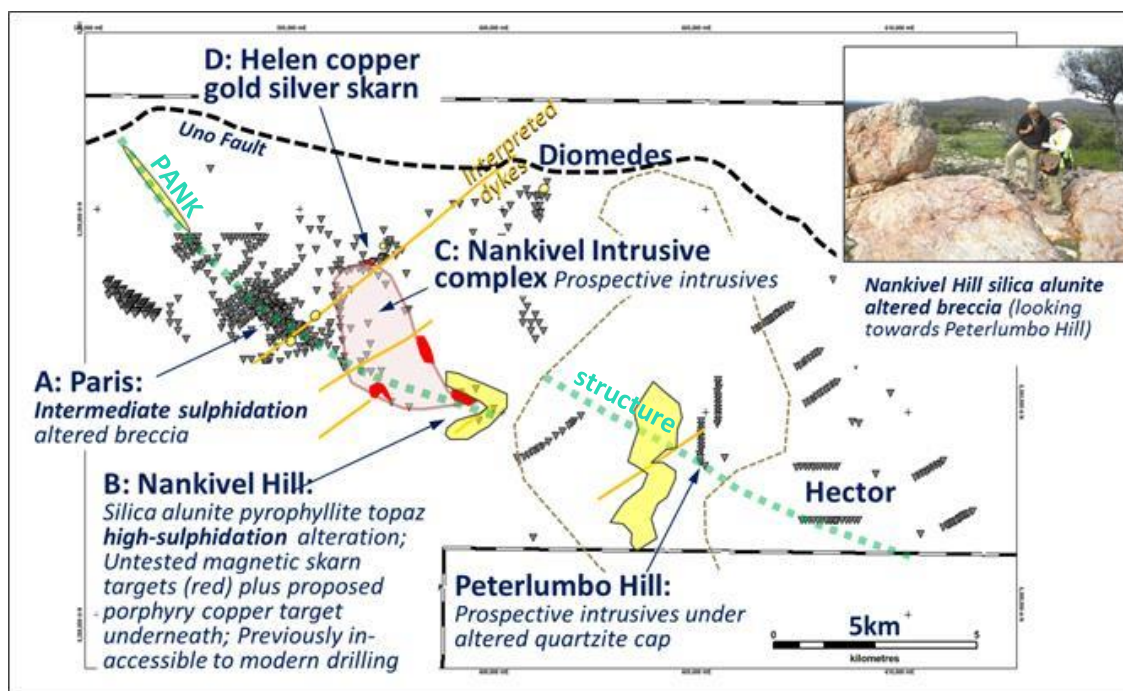
The Company's next objective is to advance the Paris Silver Project to an Indicated Mineral Resource. The drilling and requirements to do this will be scoped. A modest drill program in a select area may quickly advance the confidence in the grade continuity for the wider deposit. In parallel, the Company is looking at various development options and scenarios.



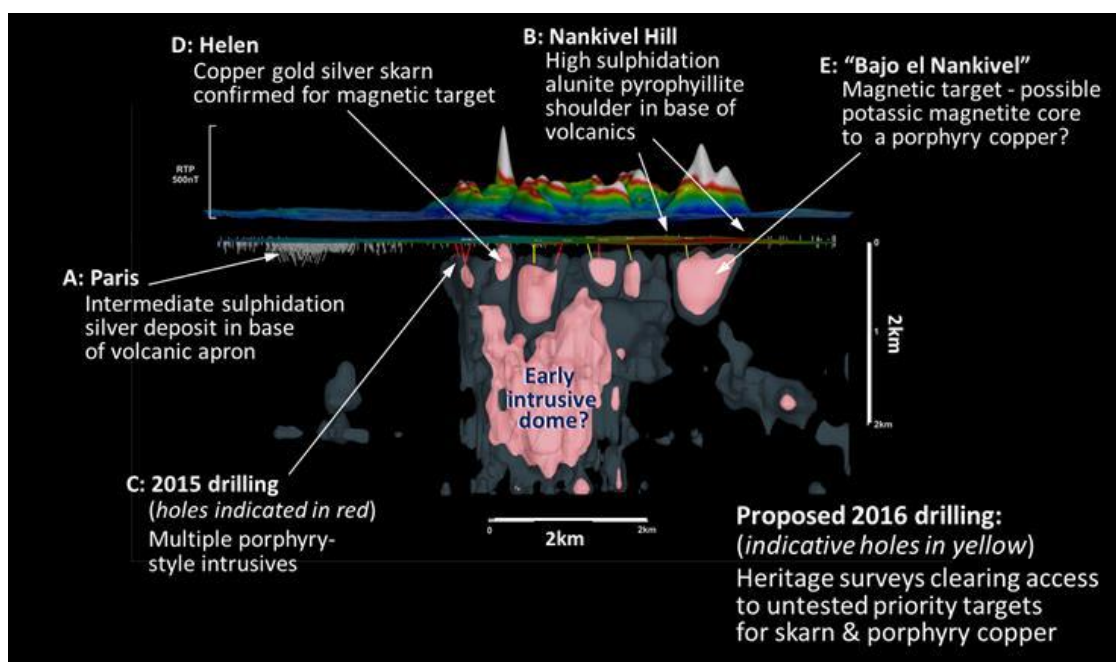


## **Nankivel Hill/Nankivel Intrusive Complex - Porphyry & Skarn Copper Targets:**

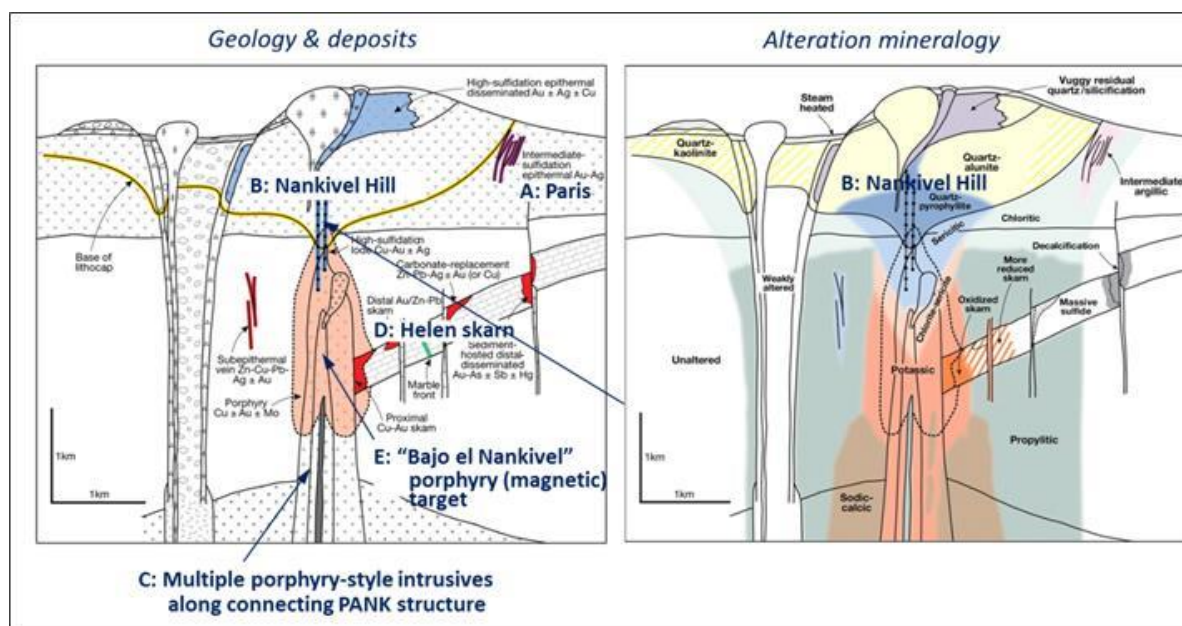
Assays and petrology for the Nankivel PACE supported drilling undertaken in July 2015, have enhanced the potential for porphyry and skarn copper in the broader Paris mineral system initially supported by the discovery of the satellite Helen copper gold silver skarn (Figures 3 & 4); (Investigator ASX Release: 20 October 2015). Additional mapping and petrology was undertaken during the quarter to reassess outcrops and float in view of the epithermal and porphyry models. Large areas of brecciation and alteration silica, in places with weathered sulphides, were mapped along with some topaz-altered volcanics, consistent with the prospective model of underlying skarn and porphyry targets (Figure 5).



**Figure 3: Paris-Nankivel Mineral System** - Plan showing ingredients and targets in the mineral system model including the NW-SE PANK structure as green dashed line, interpreted to connect Paris with the main copper prospects.



**Figure 4: Paris-Nankivel Mineral System** - Perspective side-on view of magnetic model and drilling for the Paris to Nankivel Hill segment showing key porphyry indicators and targets

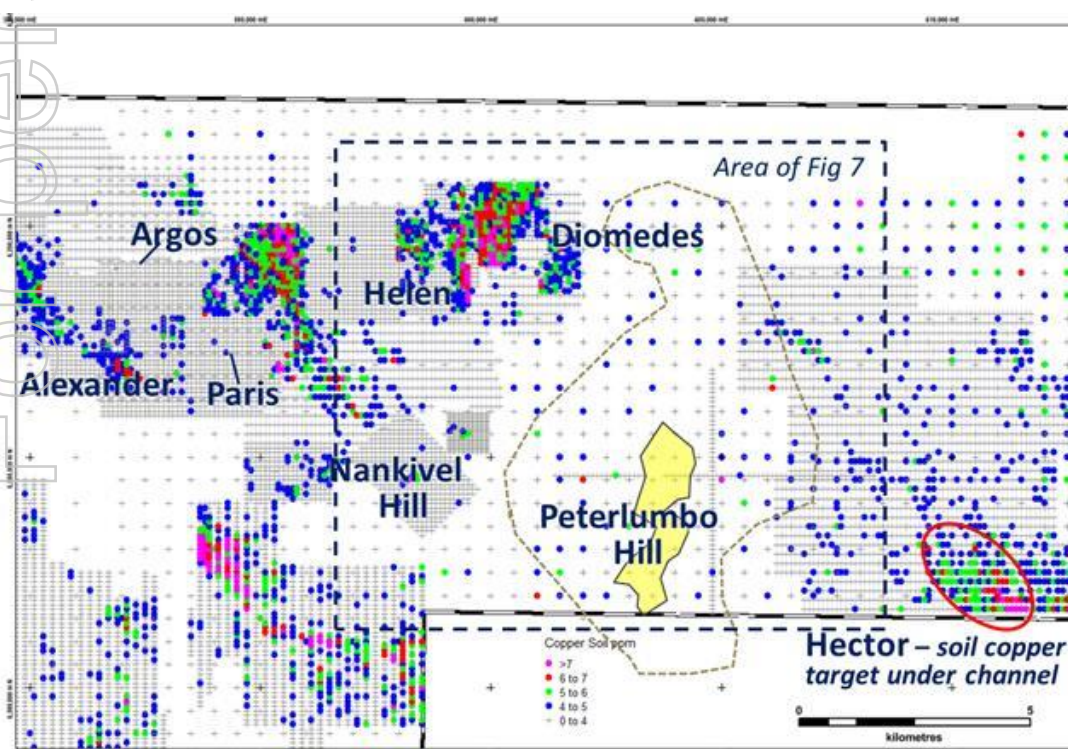


**Figure 5: Standard porphyry model** (diagrams from Sillitoe 2010) - Labeled with comparable porphyry attributes & targets for the Paris-Nankivel system

## **Peterlumbo Hill/Hector - Porphyry Copper Potential:**

Peterlumbo Hill is another area with porphyry potential that was upgraded by the July PACE drilling and remapping to the long-held concept of an intrusive complex adjacent to Peterlumbo Hill (Figure 3); (Investigator ASX Release: 20 October 2015).

Micro-monzonites and micro-granitoids indicative of porphyry style intrusives along with newly-mapped tourmaline alteration are encouraging for porphyry targets under the talus covered eastern side of Peterlumbo Hill. The prospective southeast PANK structure (Figure 3) continues on to Hector where a copper-in-soil anomaly overlies an otherwise covered palaeochannel (Figure 6). This was intended for drill investigation in the prior July PACE program but the loose sands of the channel sediments prevented the drilling technique from reaching the target basement.



**Figure 6: Paris-Nankivel field**  
Copper-in-soil plan



## Heritage Survey:

Follow up reports were received for the heritage field survey undertaken in October. With some sensitive sites identified mainly over outcrops, the areas were generally cleared for drilling. In particular, the high-priority but previously drill inaccessible Nankivel targets were cleared for drill access.

## Diomedes Prospect - Nickel Potential:

Consultant petrology, remapping and further review of past Investigator scout drill results firmed up the potential for shallow nickel of possible Archaean age at Diomedes (Investigator ASX Release: 20 October 2015).

A previously reported review of 2011 and 2014 scout drilling in the Diomedes area recognised nickel intersections in nine widespread holes with initial petrology identifying an metamorphosed ultramafic host in one hole PPRC274 (Investigator ASX release: 7 August 2015). Additional consultant petrology was undertaken during the quarter for other nickel anomalous holes and this expanded the extent of confirmed basement ultramafics to another four holes in a 2km by 1km area (Figure 7). Traces of likely nickel sulphide (pentlandite) were recognised with iron sulphide (pyrrhotite) and copper sulphide (chalcopyrite) in two holes. Although some secondary nickel enrichment is usually expected at shallow depths, the presence of sulphides at 54m depth is very encouraging for nickel sulphide targets at Diomedes.

Intersections in older drilling (with no petrological material available) and magnetics indicate the area of the prospective ultramafic enclave to be at least 4km by 8km and possibly up to 10km by 5km in area.

In the northern half of the enclave, soil geochemistry has delineated about five strike kilometres of nickel anomalies in which the majority of the scout drilling has intersected ultramafics and elevated nickel. Shallow scout drilling of around 30m depth in 2011 (PLAC holes - Figure 7) also intersected nickel showing the southern half of the enclave is prospective under thin cover.

The pyrrhotite and magnetic associations with the nickel mineralisation in the northern part of the enclave warrant particular investigation of two moderate-intensity magnetic anomalies in the covered south (Figure 7).

Infill soil sampling is underway to fast track the conversion of the nickel and magnetic anomalies into drill targets ahead of the 2016 round of PACE collaborative drill funding.

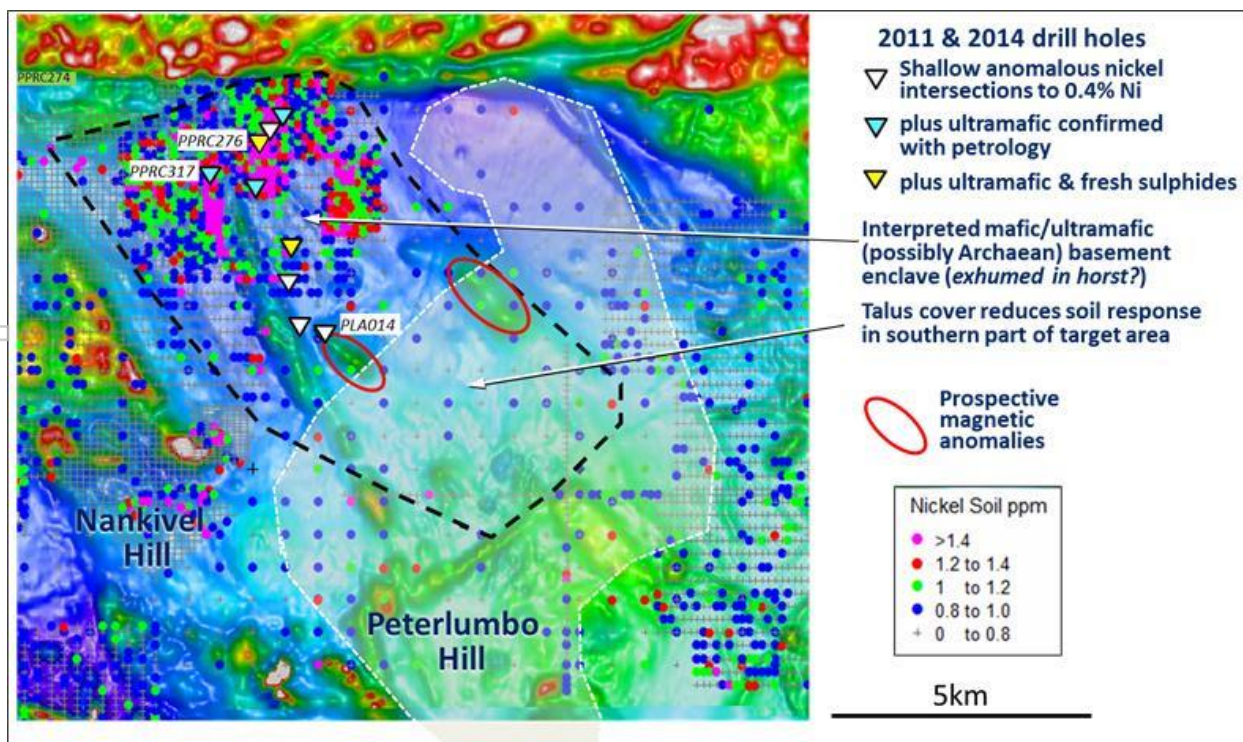


Figure 7: Diomedes nickel prospect - Plan showing prior drilling and target elements

## Regional Eyre Peninsula Projects

**Thurlga Joint Venture** (Gawler Resources Limited, earning to 75% and Manager, Peninsula Resources/Adelaide Resources) Thurlga (EL5419) [Refer to Figures 8 and 11]:

Limited and focussed soil sampling continued during the December Quarter, with an additional 292 infill samples collected.

The majority of samples were collected over the newly defined Wide soil anomaly, a 500m by 500m multi-element silver target.

The Wide and Starburst silver targets will be ground assessed and considered for 2016 scout drilling to seek truckable additions for the Paris silver project about 15km to the east.

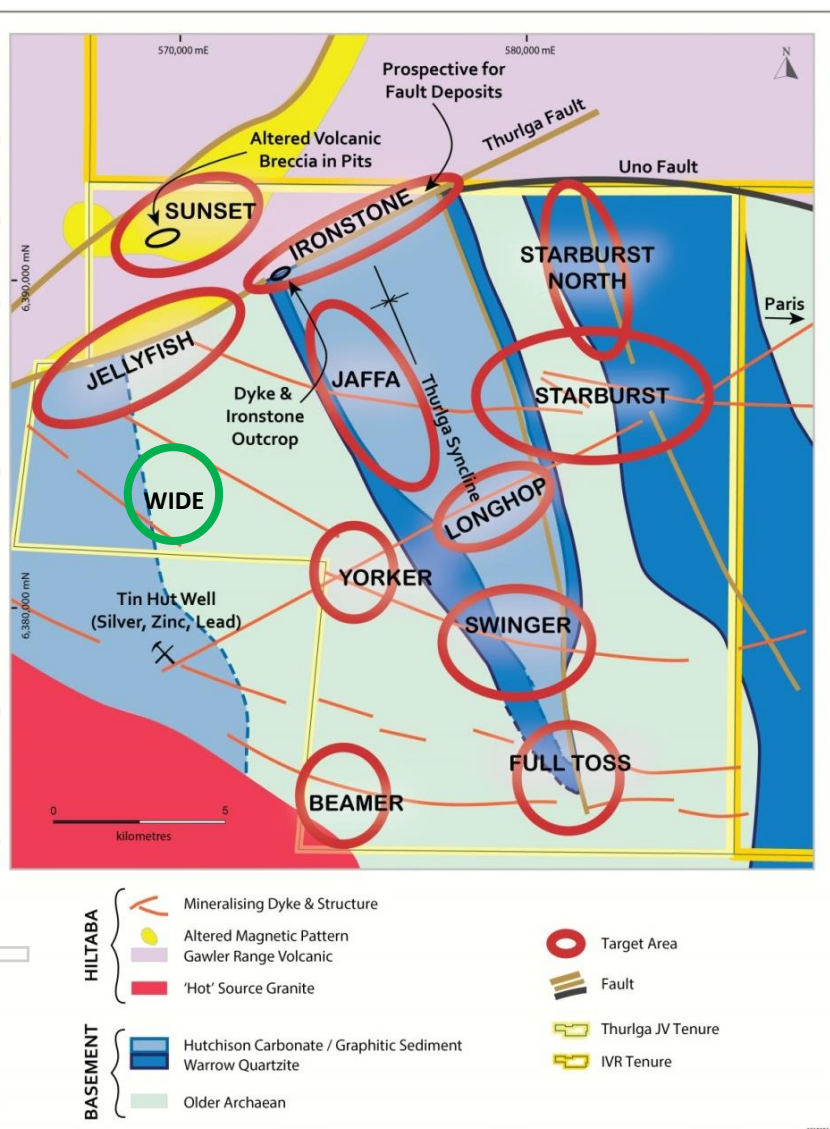


Figure 8: Thurlga JV - Target Plan

**Fairfield (EL5697) (IVR 100%)** [Refer to Figures 1 and 11]:

An application was made for the Fairfield tenement (245km<sup>2</sup> in size) with the conceptual opportunity for nickel in possible Hiltaba mafic intrusives now being recognised across the Uno Province. The area is covered with little response in Investigator's prior soil geochemistry; however the magnetic and gravity patterns indicating possible inter-intruded granites and mafic bodies, along with the coincidence with the new magneto-telluric ("MT") corridor, prompted the reapplication for the area. With the tenement granted late in January, there was no activity during the December Quarter.



## *Uno/Morgans (EL4769 & 4828) (IVR 100%) [Refer to Figure 11]:*

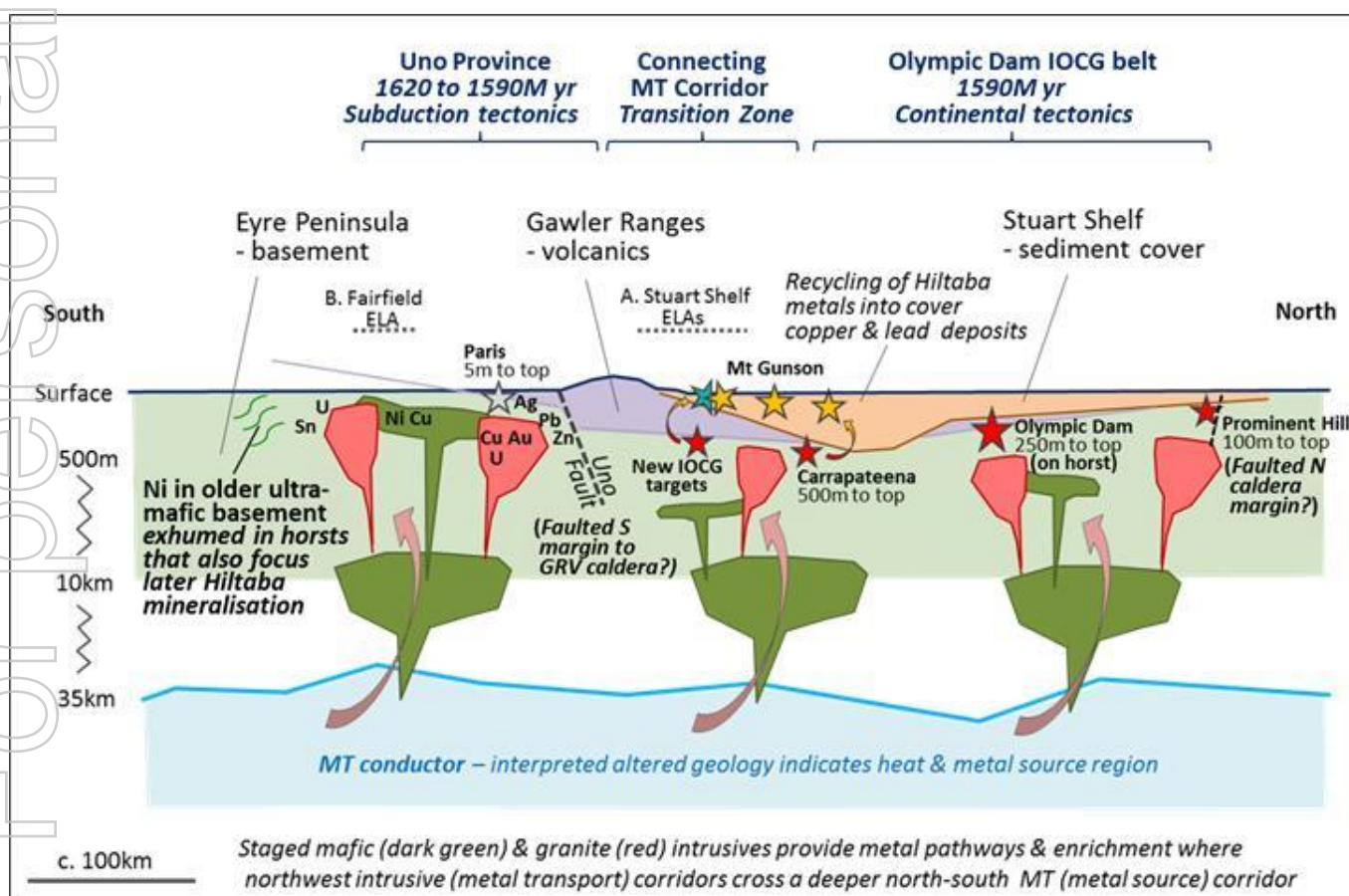
The main interest is the regional nickel potential indicated by the fuchsite chromite quartzites and nickel anomalous ironstones newly mapped within the tenements. Along with the 2010 government dating of 3.15 billion year old granites at Cooyerdoo nearby, Archaean rocks with nickel potential may occur over a wide area in the district. This potential is being assessed as another significant development for the Uno Province that may quickly add value.

## **Stuart Shelf MT Corridor Project**

*Yalymboo-Oakden Hills (ELA151/15), Whittata (ELA154/15), Yudnapinna, (ELA155/15) and Birthday (ELA198/15) (GRL 100%) [Refer to Figures 1, 9, 10 and 11]:*

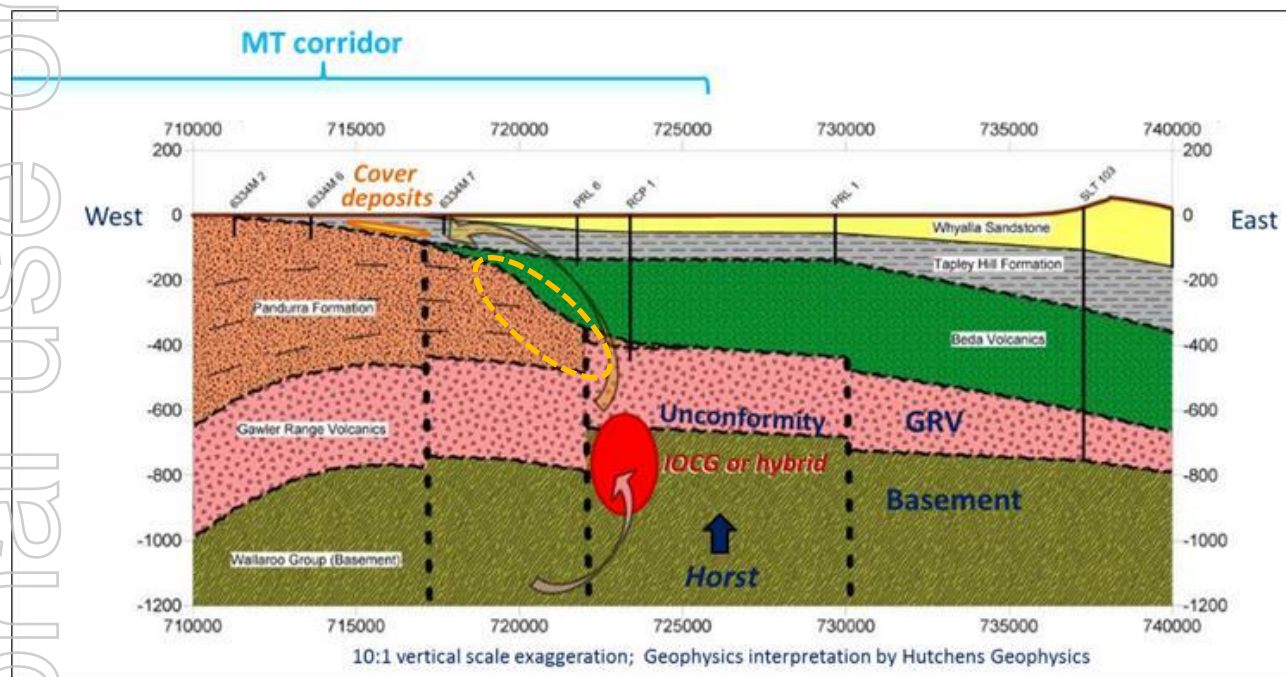
Following the release of breakthrough MT geophysical research and surveys undertaken by the University of Adelaide and the State Government (Thiel & Heinson, 26<sup>th</sup> IUGG General Assembly, Prague 27 June 2015), Investigator submitted Exploration Licence Applications for six tenements in late July (Investigator Quarterly Report ending 30 September 2015: 27 October 2015). Following an initial high-level review and the offer of the six tenements by the South Australian Department of State Development, the Company accepted four tenements that are currently awaiting final grant.

During the December Quarter, the Company started reviewing a significant amount of historic data covering over 40-years. A number of cover prospects were identified with scout drilling by previous explorers. Integration and modelling of the diverse historic exploration company and government surveys has identified possible IOCG geophysical targets in the basement and extensive areas of shallow base metal anomalism identified by past explorers seeking deposits in the cover around Mount Gunson (Figure 9).



**Figure 9: Southern Gawler Craton - Conceptual regional long section along the interpreted MT corridor showing breakthrough target opportunities including the potential for IOCG or hybrid copper deposits in the transitional zone between the Olympic Dam and Uno Provinces**

The targeting will also be assisted by the concept of metal deposits preferentially forming in uplifted horst blocks such as is interpreted at Olympic Dam. Preliminary replotting of drilling by prior explorers shows horst structures are present in the target basement and probably remained active during the subsequent formation of the cover rocks as indicated by the section below (Figure 10). Priority will be given to assessing these structures for untested gravity targets indicating heavy haematite as a *defacto* marker of copper and gold in IOCG deposits. A secondary target concept is for deeper cover deposits in the structures between the IOCG and known cover deposits near the surface. The possibility of targeting these deeper cover deposits with techniques not available to the previous explorers will be considered.



**Figure 10: Stuart Shelf MT Corridor** - Example section showing targeting concepts of fluid flow (arrows) from deep crustal metal sources mapped by MT up horst structures and into basement and cover trap sites. The potential for deeper cover deposits in the mineralising structure is indicated within the dashed orange ellipse.

## 2016 priorities

Investigator's focus continues on the southern Gawler Craton with building the development and spectrum of discovery opportunities. A skilled geological team is being maintained to progress these opportunities through 2016 at minimal cost to the Company.

The Company's first priority is the advancement the Paris Silver Project to an Indicated Mineral Resource. This may only require a modest drill program in a select area which may quickly advance the confidence in the grade continuity for the wider deposit. In parallel, the Company is actively looking at various development options.

During the next quarter, Investigator is proposing to make multiple submissions for State Government PACE collaborative drill funding in the next round forecast to be launched in February. The State Government made a preliminary announcement in December that funding will be doubled to A\$200,000 maximum for each collaboration project.

The Investigator candidates for PACE funding may include the Nankivel porphyry/skarn copper targets, silver targets in support of the Paris silver project and any IOCG targets developed in the Stuart Shelf MT corridor. The Diomedes nickel potential may quickly achieve high-priority drill targets in 2016 with a small amount of soil sampling currently underway to firm up the nickel and magnetic anomalies.

The PACE selection process will take about three months, so drill starts will await those outcomes.

The nickel potential of the district around the Uno/Morgans and Cooyerdoo area is also being assessed.



# TENEMENT QUARTERLY STATUS

Table 1 summary's the changes to Investigator Resources Limited tenement holding during the December 2015 Quarter. Figure 11 shows the location of the Investigator tenements.

**Table 1:** Summary of Investigator Resources Limited tenement changes during the December 2015 Quarter.

Tenement Number	Tenement Name	Registered Holder	Note
<b>Project: East Eyre Peninsula (IVR 100%)</b>			
5109	Lake Gilles	GRL	Current
4841	Moonabie	GRL	Current
4860	Moseley Nobs	GRL	Current
5406	Botenella Gate	GRL	Current
4726	Barna Hill	GRL	Current
4827	Mt Nott	GRL	Current
4938	Kimba	IVR	Current - Area reduced by 112km <sup>2</sup>
5697	Fairfield	IVR	Granted after end of Quarter
<b>Project: Peterlumbo (IVR 100%)</b>			
5368	Peterlumbo	Sunthe	Current
<b>Project: Uno/Morgans (IVR 100%)</b>			
4769	Uno Range	GRL	Current
4828	Morgans	GRL	Current
<b>Project: West Eyre Peninsula (IVR 100%)</b>			
5388	Mt Centre	IVR	Current
5436	Emerald Rise	IVR	Surrendered
5389	Scrubby Peak	IVR	Current
5512	Googs Lake	IVR	Current
<b>Project: Northern Yorke Peninsula (IVR 100%)</b>			
5444	The Hummocks	GOY	Current - Area reduced by 174km <sup>2</sup>
4618	Bute	GOY	Current
<b>Project: Thurgla JV (PRL, GRL earning to 75%)</b>			
5419	Thurgla	PRL, GRL earning to 75%	Current
<b>Project: Central Gawler (IVR 100%)</b>			
151/15	Yalymboo-Oakden Hills	GRL	Application, pending Ministerial approval
154/15	Whittata	GRL	Application, pending Ministerial approval
155/15	Yudnapinna	GRL	Application, pending Ministerial approval
198/15	Birthday	GRL	Application, pending Ministerial approval

## Notes:

IVR - Investigator Resources Ltd.

Sunthe - Sunthe Uranium Pty Ltd, a wholly owned subsidiary of Investigator Resources Ltd.

GRL - Gawler Resources Pty Ltd, a wholly owned subsidiary of Investigator Resources Ltd.

GOY - Goyder Resources Pty Ltd, a wholly owned subsidiary of Investigator Resources Ltd.

PRL - Peninsula Resources Ltd, a wholly owned subsidiary of Adelaide Resources Ltd.

During the Quarter, Ministerial Approval was given for the surrender of EL5436 (Emerald Rise). In addition, there were area reductions for EL4938 (Kimba) 112km<sup>2</sup> and EL5444 (The Hummocks) 174km<sup>2</sup>, associated with the tenement renewals.

There were no other changes to the beneficial percentage interests in farm-in or farm-out agreements held or relinquished during the Quarter.

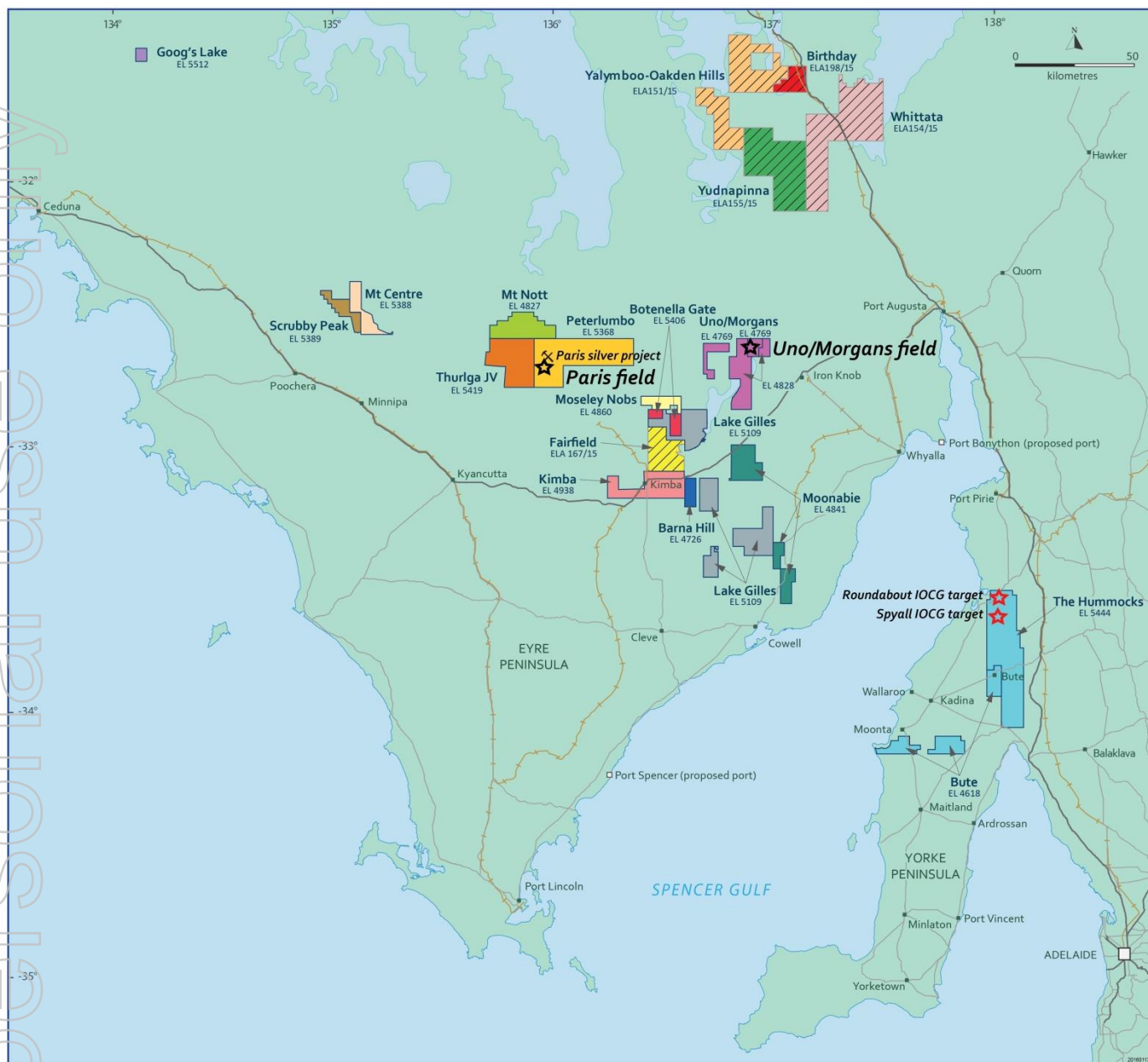


Figure 11: Investigator tenement plan



## CORPORATE FOCUS AND KEY PROJECTS

- The Company's next objective is to advance the Paris Silver Project to an Indicated Mineral Resource.
- Seek additional larger silver and copper resources within the wider Paris field and broad Uno Province, with the potential and know-how demonstrated by the Paris discovery.
- Become a silver, lead, gold and copper developer through exploration and acquisition.

## KEY PROJECTS

### Southern Gawler Craton:

1. Paris silver project and other silver, lead, gold or copper targets within Peterlumbo field.
2. Regional silver-lead-gold-copper targets in other potential fields such as Uno/Morgans and Thurlga JV.
3. Northern Yorke Peninsula - Roundabout/Spyall IOCG and Hillside-style copper targets.
4. Stuart Shelf MT Corridor ELAs - Explore for untested IOCG or hybrid deposits



## ABOUT INVESTIGATOR RESOURCES

Investigator Resources Limited (ASX code: IVR) is a metals explorer with a focus on the opportunities for greenfields silver-lead, copper-gold and nickel discoveries offered by the resurging minerals frontier of the southern Gawler Craton on South Australia's northern Eyre and Yorke Peninsulas.

The Company announced a revised upward estimation for the Paris Silver Project Inferred Mineral Resource for its 2011 Paris silver discovery to 8.8Mt at 116g/t silver, containing 33Moz silver (at a 50g/t silver cut-off) in November 2015.

The Company has applied a consistent and innovative strategy that has developed multiple ideas and quality targets that has given Investigator first-mover status.

These include the Paris silver discovery, the recognition of other epithermal fields and the associated conceptual potential for porphyry copper of Olympic Dam age, along with the possibility of Archaean nickel in the underlying basement.

## CORPORATE

The quarterly direct exploration expenditure was A\$0.46million, and associated corporate and administration costs were A\$0.27million. The Company held A\$1.71million in cash at the end of the report quarter.

## CAPITAL STRUCTURE

As at 27 January 2015:

- Shares on issue 462,287,960
- Listed Options 114,179,704
- Unlisted Options 20,600,000

The top 20 shareholders at 27 January 2015 held 35.68% of the shares on issue.

Total shareholders: 3,288

## SUBSTANTIAL SHAREHOLDERS

As at 27 January 2015:

- CITIC Australia Pty Ltd - 14.51%.

ASX listing code: IVR

## DIRECTORS AND MANAGEMENT

Mr Roger Marshall OBE (Non Exec. Chairman)

Mr David Jones (Non Exec. Director)

Mr Bruce Foy (Non Exec. Director)

Mr John Anderson (Managing Director)

Mr Peter Harding-Smith (CFO and Company Secretary)

## COMPETENT PERSON COMPLIANCE STATEMENT

The information in this presentation relating to exploration results is based on information compiled by Mr. John Anderson who is a full time employee of the company. Mr. Anderson is a member of the Australasian Institute of Mining and Metallurgy. Mr. Anderson has sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr. Anderson consents to the inclusion in this report of the matters based on information in the form and context in which it appears.

The information in this presentation that relates to Mineral Resources Estimates at the Paris Silver Project is extracted from the report entitled "Upgraded Paris resource estimate: 60% increase to 33Moz silver" dated 9 November 2015 and is available to view on the Company website [www.investres.com.au](http://www.investres.com.au). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

## FOR FURTHER INFORMATION:

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