

# Superior Resources Limited

ABN 72 112 844 407

**Registered Office:**  
Unit 8, 61 Holdsworth Street  
Coorparoo Queensland 4151  
**Postal Address:**  
PO Box 189  
Coorparoo Queensland 4151  
**Telephone:** 07 3847 2887  
**Email:** [manager@superiorresources.com.au](mailto:manager@superiorresources.com.au)

## QUARTERLY ACTIVITIES REPORT Period ending 31 December 2017

### SUMMARY

- **Cobalt Review of Current Projects**
  - Identification of new nickel-cobalt prospect (Lucky Creek Prospect)
  - Two new tenement applications over:
    - areas of cobalt potential at **Greenvale Project**;
    - historic cobalt in rock chip assay results near the **Victor Project**; and
  - Examination of cobalt, copper, zinc and lead mineralisation potential of a similar style to the Walford Creek copper-cobalt project located about 5 kilometres to the east (held by Aeon Metals)
- **Maiden Gold Mineral Resource Estimate – Steam Engine Prospect (Greenvale Project)**
  - Established a maiden JORC Inferred Mineral Resource Estimate (**MRE**):
    - **1,000,000 tonnes @ 2.5g/t gold (1.0g/t cut-off)**
    - **85,000 ounces contained gold**
  - MRE based only on 400m strike length of outcropping lode.
  - Total strike length of known mineralised lode at least 2.5km.

### Superior Resources Limited

ASX:SPQ

#### Board

Carlos Fernicola – Chairman  
Peter Hwang – Managing Director  
Ken Harvey – Non-exec Director  
Carlos Fernicola – Company Secretary

#### Securities

Ordinary Shares – 480,921,804  
Top 20 holders: 64.02% issued capital

#### Summary

Superior Resources Limited is a Brisbane based ASX-listed mineral explorer whose principle aim is the discovery of large base metal deposits in northern Queensland. Superior holds several exploration projects in northwest Queensland for large Mount Isa type copper and lead-zinc-silver deposits and exploration projects in northeast Queensland for copper-gold-lead-zinc-silver deposits.

#### Share Registry

Link Market Services  
Level 15, 324 Queens Street  
Brisbane, QLD, 4000

#### Web Site

[www.superiorresources.com.au](http://www.superiorresources.com.au)

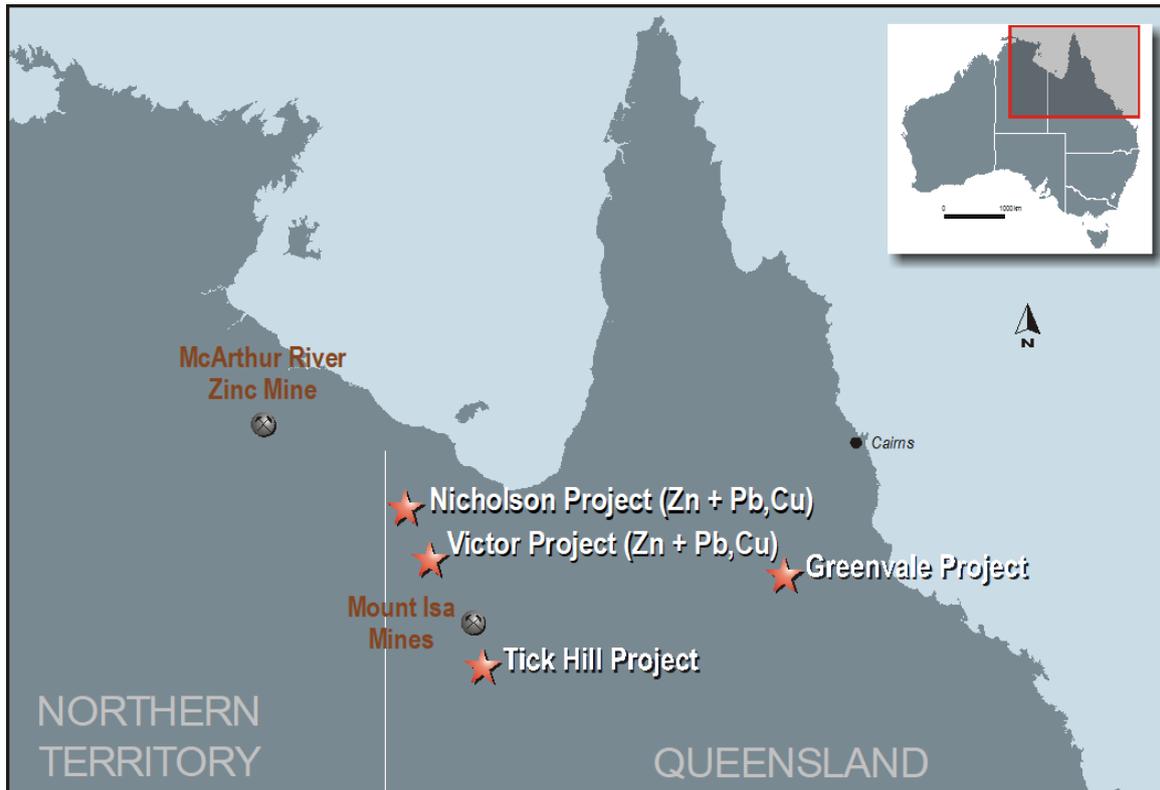
#### Contact

Peter Hwang  
(07) 3847 2887

Carlos Fernicola  
(07) 3831 3922



## PROJECT LOCATIONS



## PROJECT OPERATIONS

The main operational activities of Superior Resources Limited (**Superior** or **Company**) during the December Quarter were focused on the Greenvale Project in north east Queensland. Additional activities included:

- Continuing desktop review and analysis of available data at the Nicholson Project for the purpose of expediting lead-zinc prospects;
- Desktop review of current project databases to identify additional cobalt potential;
- New project generation – analysis of existing Company databases to generate new cobalt-related projects;
- Preparation of new exploration tenement applications to secure new cobalt-related projects.

### ***New Cobalt-Potential Projects – generated from data review***

As part of a portfolio-wide data review, the Company has identified areas that present cobalt mineralisation potential based on historic exploration data:

- the Lucky Creek Prospect within the Greenvale Project area was announced to the market on 18 December 2017;
- a large aerial magnetic feature referred to as “The Big Mag”, located about 5kms south of the Company’s Bottletree Prospect is being investigated for its cobalt, copper and other metal mineralisation potential. This feature and other prospective areas are covered by a new exploration permit for minerals (**EPM**) tenement application, lodged by the Company during late December 2017; and



- rock chip samples collected by Superior during 2009 from an area located about 25kms north east of the Company's Victor Project in north west Queensland, returned elevated cobalt assay results. This area is covered by a new exploration permit for minerals (EPM) tenement application, lodged by the Company during late December 2017.

### Cobalt Review at Greenvale – Lucky Creek Prospect

The Company has identified a new nickel-cobalt-copper-zinc prospect, the Lucky Creek Prospect, located within the highly mineralised Lucky Creek Corridor (Figure 1). The Greenvale Project includes several other of the Company's recently reported prospects: Bottletree, Steam Engine, Galah Dam, Cockie Creek and the One Mile prospect, which are also located within the Lucky Creek Corridor.

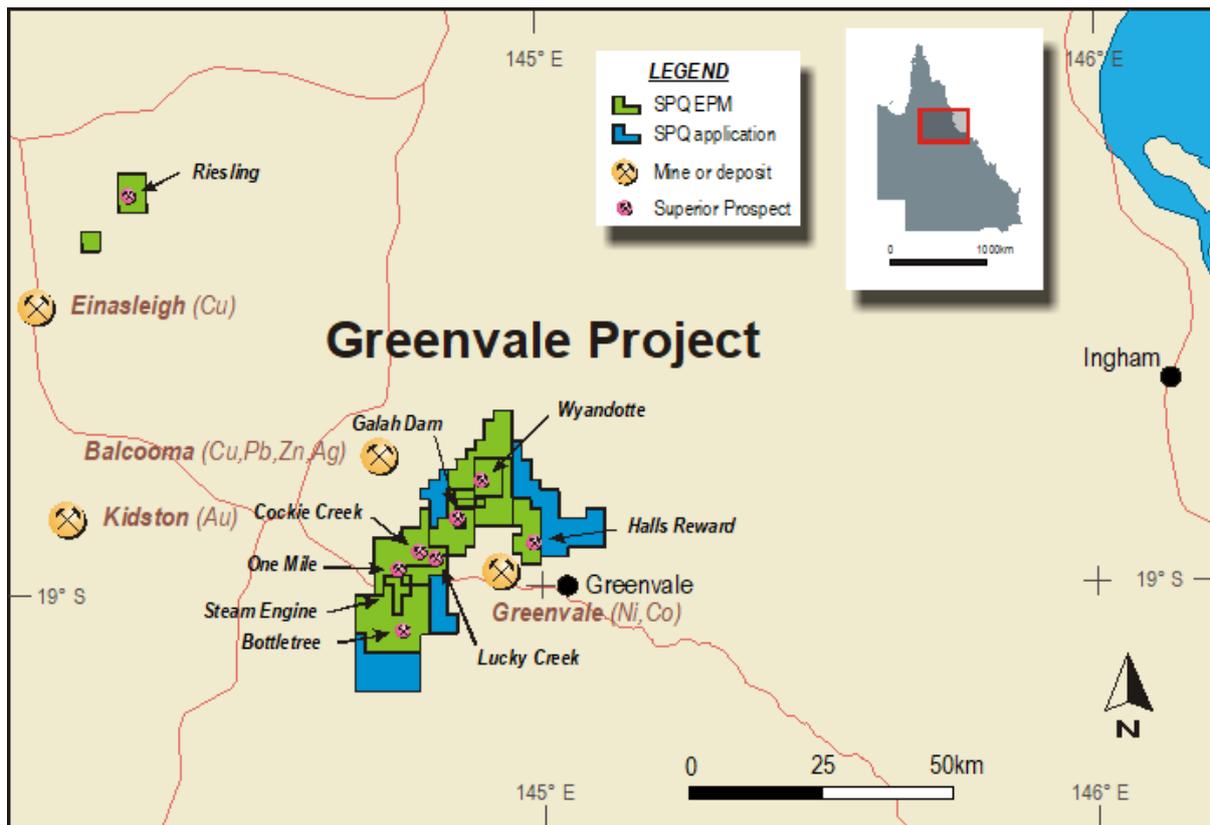


Figure 1. Location of the 100%-owned Greenvale Project tenements and tenement applications.

The Lucky Creek Prospect is located 12km west of the Greenvale Nickel-Cobalt Mine and similarly adjacent to the SCONI scandium-cobalt-nickel project (Australian Mines Limited) (Figure 2), which is comparable in size and operationally to Clean TeQ Holding's Sunrise (Syerston) Nickel-Cobalt Project.

Compilation and imaging of historical soil sampling data has delineated the Lucky Creek Prospect by anomalously high nickel (up to 1220 ppm) and cobalt (up to 596 ppm) soil values aligned along a northeast-southwest zone (Figure 3).

At the Lucky Creek Prospect which lies some 3km east of Superior's Cockie Creek Porphyry Copper Deposit, high levels of cobalt occur in historical soil samples. These soil values extend over a distance of some 3.8km with a peak cobalt content of 596 ppm in one area associated with anomalous copper, nickel and zinc soil values. Peak values of up to 1220 ppm nickel, 272 ppm copper and 192 ppm zinc are also observed over the anomalous area.

To the northeast of this anomalous area a high order VTEM anomaly may indicate an extension of the zone of cobalt into this area (Figure 3). Further to the northeast of the VTEM anomaly, historical work

has been completed on a ferruginous area with outcropping gossans showing anomalous soil copper and zinc values at the Lucky Duck Prospect. The entire zone of interest between Lucky Creek and Lucky Duck extends for 12km and lies within Superior's tenements.

Only limited historical work (soil and limited rock chip sampling) has previously been reported along this zone.

The total prospective zone has substantial soil cover with only limited outcrop available for surface sampling. The Lucky Creek Prospect has not previously been drilled.

**Next Steps**

Upon completion of the current capital raising campaign and regulatory access requirements, Superior intends to complete initial field work on the limited outcrops in the area to appraise the cobalt, nickel, copper and zinc potential followed by drilling beneath the soil cover.

The Company is planning work in the field to commence during March 2018.

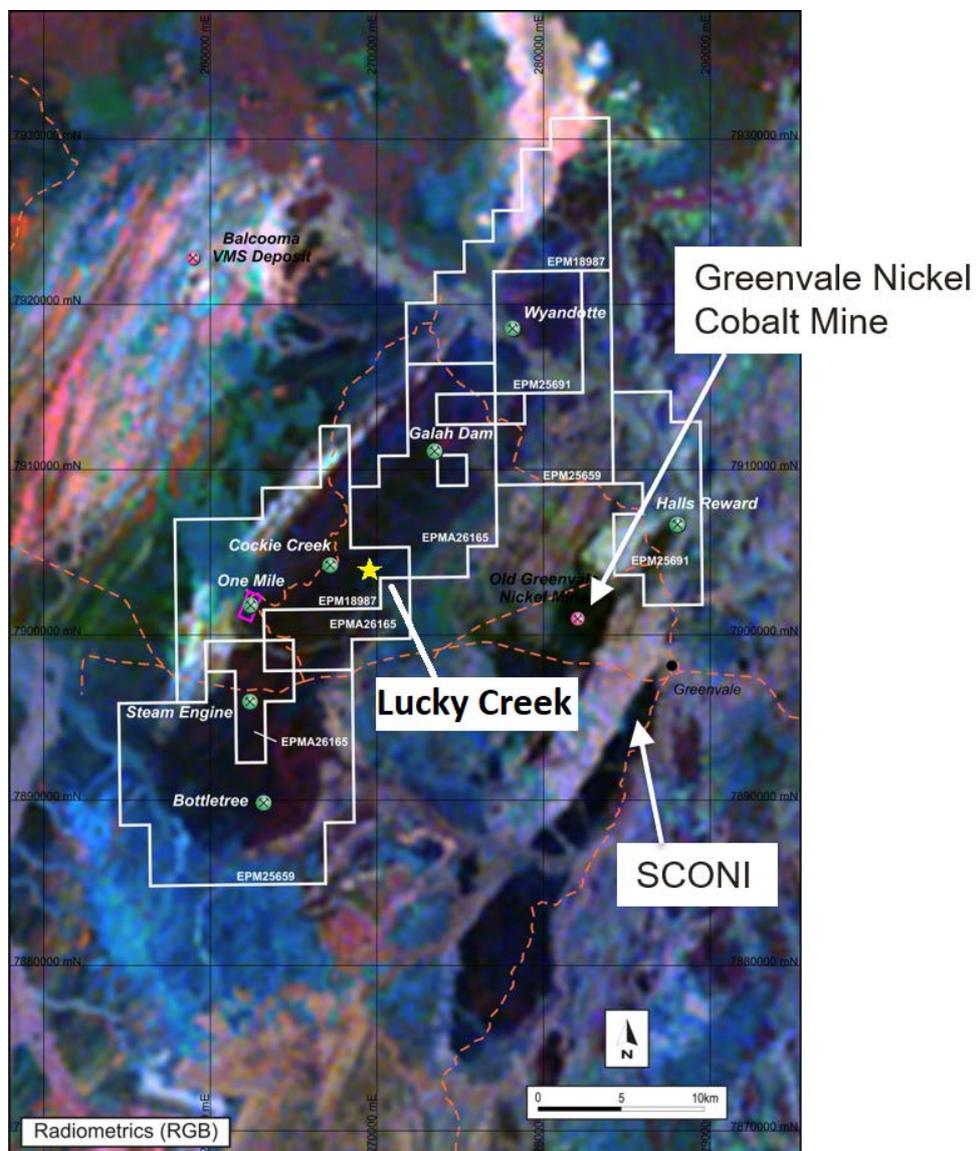


Figure 2. Greenvale Project Tenements and prospect locations overlain on radiometric data, which clearly highlights the prospective Ordovician age rock sequences. The SCONI Project and Greenvale Nickel-Cobalt Mine are referenced (not held by Superior).

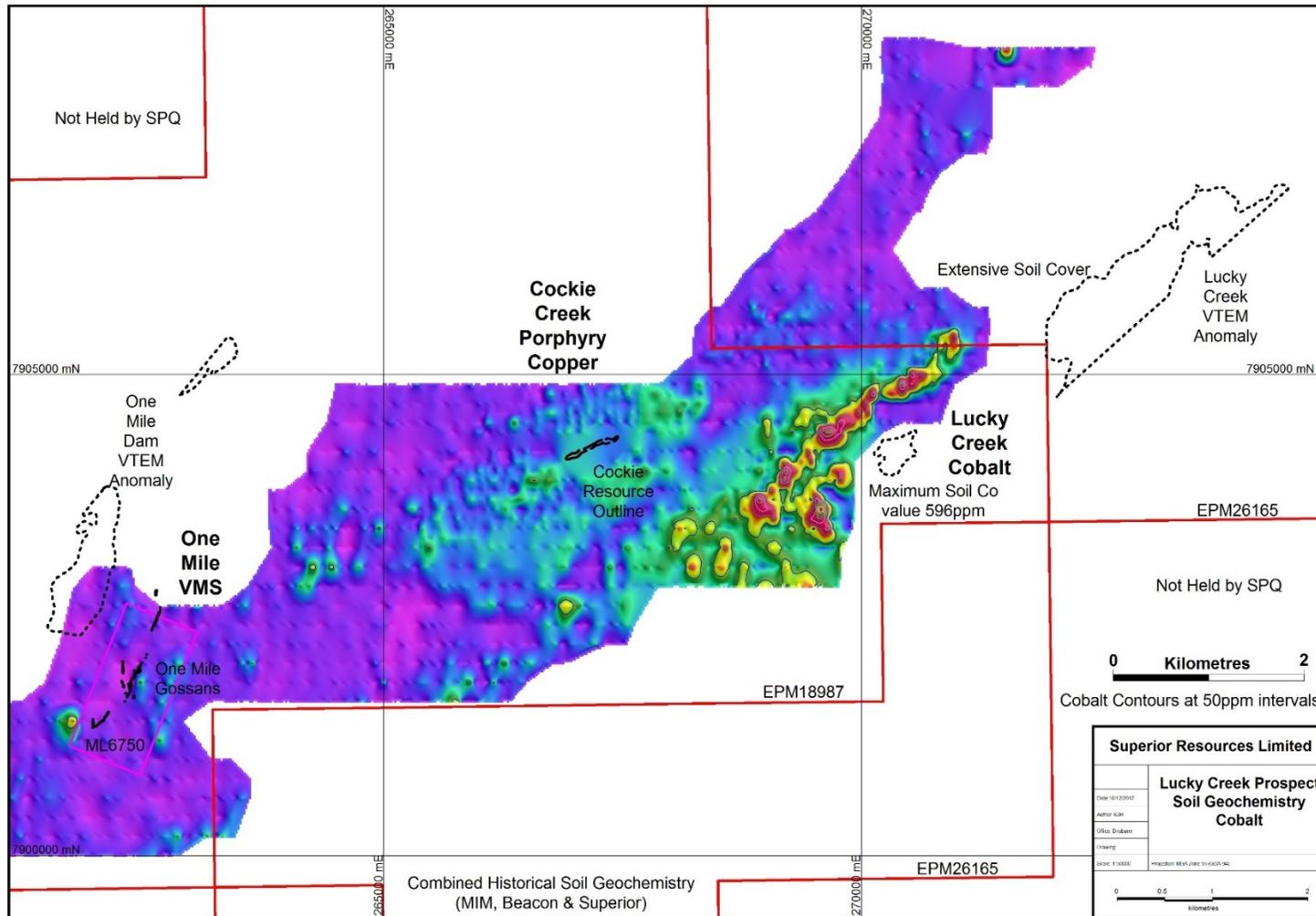


Figure 3. Image of historic cobalt soil sampling data at the Lucky Creek Prospect. The maximum cobalt-in-soil value is 596 ppm cobalt. The dashed polygons to the east and north east of Lucky Creek outline the location of high order VTEM anomalies.



### **New EPM – “Big Mag” feature**

The Company’s continuing data review has also resulted in the identification of a large aerial magnetic feature referred to as “The Big Mag”, located about 5kms south of the Company’s Bottletree Prospect, as having cobalt, copper and other metal mineralisation potential. This feature was previously covered by the Company’s current Greenvale Project tenement, EPM 25659, before being relinquished as a result of compulsory regulatory tenement area reduction requirements.

As a result of the realised cobalt potential, the Big Mag feature and other prospective areas adjacent to the northern parts of the Greenvale Project have been covered by a new EPM application (EPM26751, Twelve Mile Creek), lodged by the Company during late December 2017 (Figure 1).

Further information regarding the EPM application and the Big Mag feature will be provided to the market shortly.

### **Greenvale Project - Background**

The Greenvale Project covers a region of volcanic and intrusive rocks of Ordovician age that are similar in type and age to the porphyry copper belt in New South Wales. The New South Wales belt of rocks host the large Cadia and North Parkes porphyry copper mines.

Superior’s Greenvale Project is highly prospective for VMS and porphyry copper, gold, zinc and silver deposits and contains at least eight known prospects. The project is located within an area of notable economic significance being proximal to the Kidston, Balcooma, Surveyor and Dry River deposits (Figure 1).

### **New EPM – Kingfisher Prospect**

As mentioned above, rock chip samples collected by Superior during 2009 from an area located about 25 kilometres north east of the Company’s Victor Project in north west Queensland, returned elevated cobalt assay results. This area previously comprised part of the Company’s Kingfisher Copper Prospect.

As a result of the realised cobalt potential, the Company applied for a new EPM (EPM26720, Victor Extended) during late December 2017 (Figure 4).

Further information regarding the cobalt assays and cobalt potential of the area will be provided to the market shortly.

### **North west Queensland – Victor and Nicholson Projects**

The Company is currently continuing a review of expected cobalt potential at its northwest Queensland Victor Project and Nicholson Project, which is the subject of an Earn-in and Joint Venture Agreement with Teck Australia Pty Ltd (**Teck**).

The Nicholson Project in particular, is being examined in detail in respect of:

- copper, cobalt, zinc and lead mineralisation potential of a similar style to the Walford Creek copper-cobalt project located about 5 kilometres to the east (held by Aeon Metals); and
- the Nicholson West lead-zinc geophysical target.

These areas are not currently targeted by Teck under the agreement arrangements.

The Company is currently in discussions with Teck regarding access to the above areas during 2018.

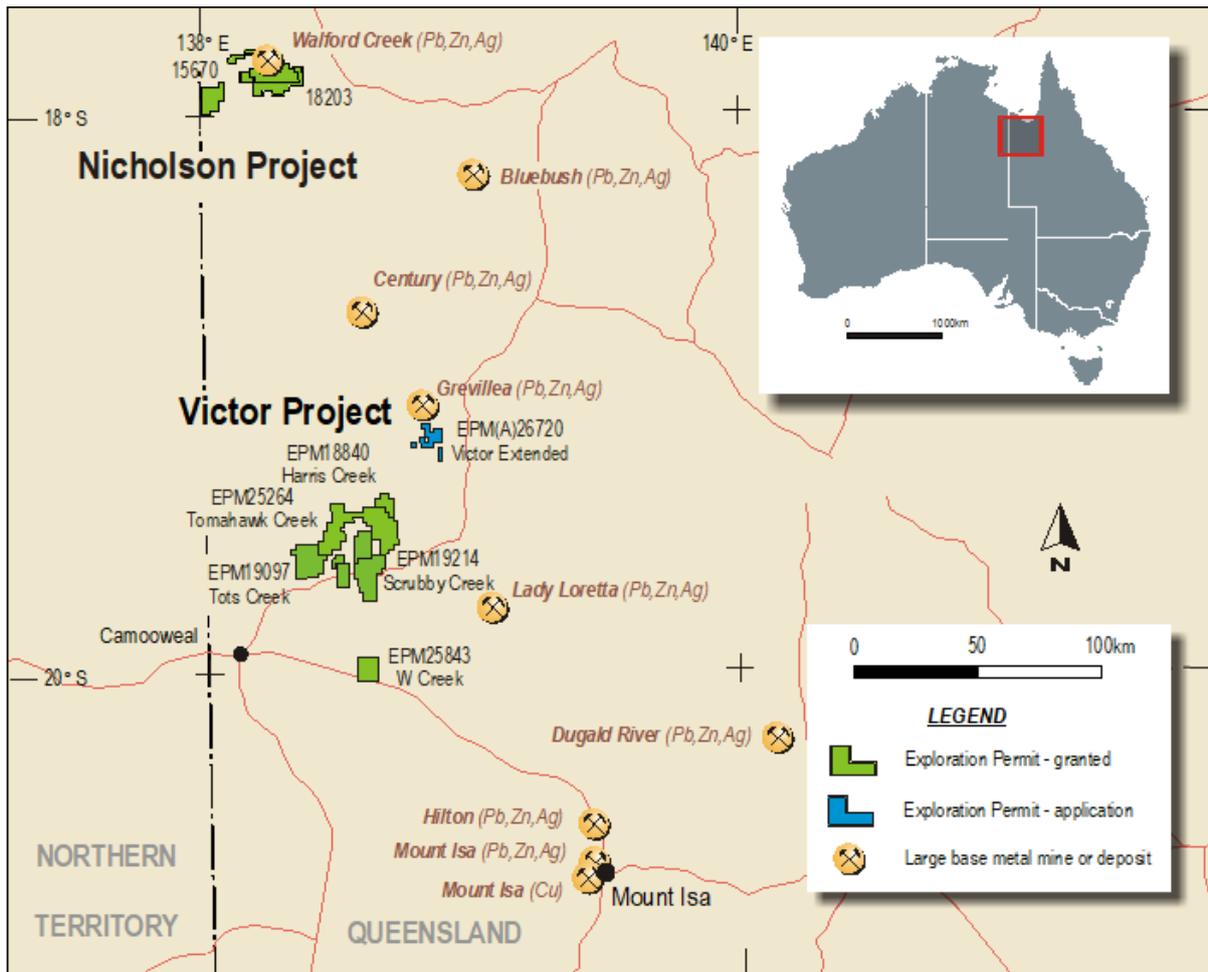


Figure 4. Location of the new EPM application (EPM26720, Victor Extended). Also showing the Company's 100%-owned Victor and Nicholson Project tenements.

### **Maiden JORC Inferred Mineral Resource Estimate – Steam Engine Gold Deposit**

The Company announced a maiden JORC (2012) inferred MRE for the Steam Engine Lode of the Steam Engine Gold Deposit (refer ASX announcement: 19 October 2017).

The Steam Engine Lode MRE (Table 1) was developed by the Company and is based on two recent reverse-circulation (RC) holes drilled by Superior, together with historic RC and diamond drill hole data generated by Noranda Australia and Beacon Minerals. Total RC and diamond drilling on or close to the Steam Engine Lode amounts to 64 drill holes for 5062.9m of drilling.

Table 1. Steam Engine Inferred Mineral Resource Estimate

Resource Category	Cut-off grade	Resource quantity	Average Au grade	Contained gold*	Description
Inferred	1.0 g/t Au	1.0 Mt	2.5 g/t	85,000 ozs	Above 435 RL

The MRE is based only on 400m of strike length of outcropping gold mineralised lode. The total strike length of the known mineralised lode is at least 2.5 kilometres.



### Steam Engine Gold Deposit - Background

The Steam Engine Gold Deposit contains two main sub-parallel gold bearing lodes, referred to as the Steam Engine Lode and the Eastern Ridge Lode, which are separated by about 600 metres (Figure 5).

The lodes are north-north-east trending, west-dipping lodes and are essentially mineralised shear zones comprising pyrite-quartz-muscovite-carbonate schist within amphibolite, metasediment and/or metatonalite. An area of gold mineralisation comprising gold lodes (Southern Zone) is located between and to the south of these two lodes.

The gold mineralisation contrasts with many gold occurrences in Queensland which are associated with gold-bearing quartz veins.

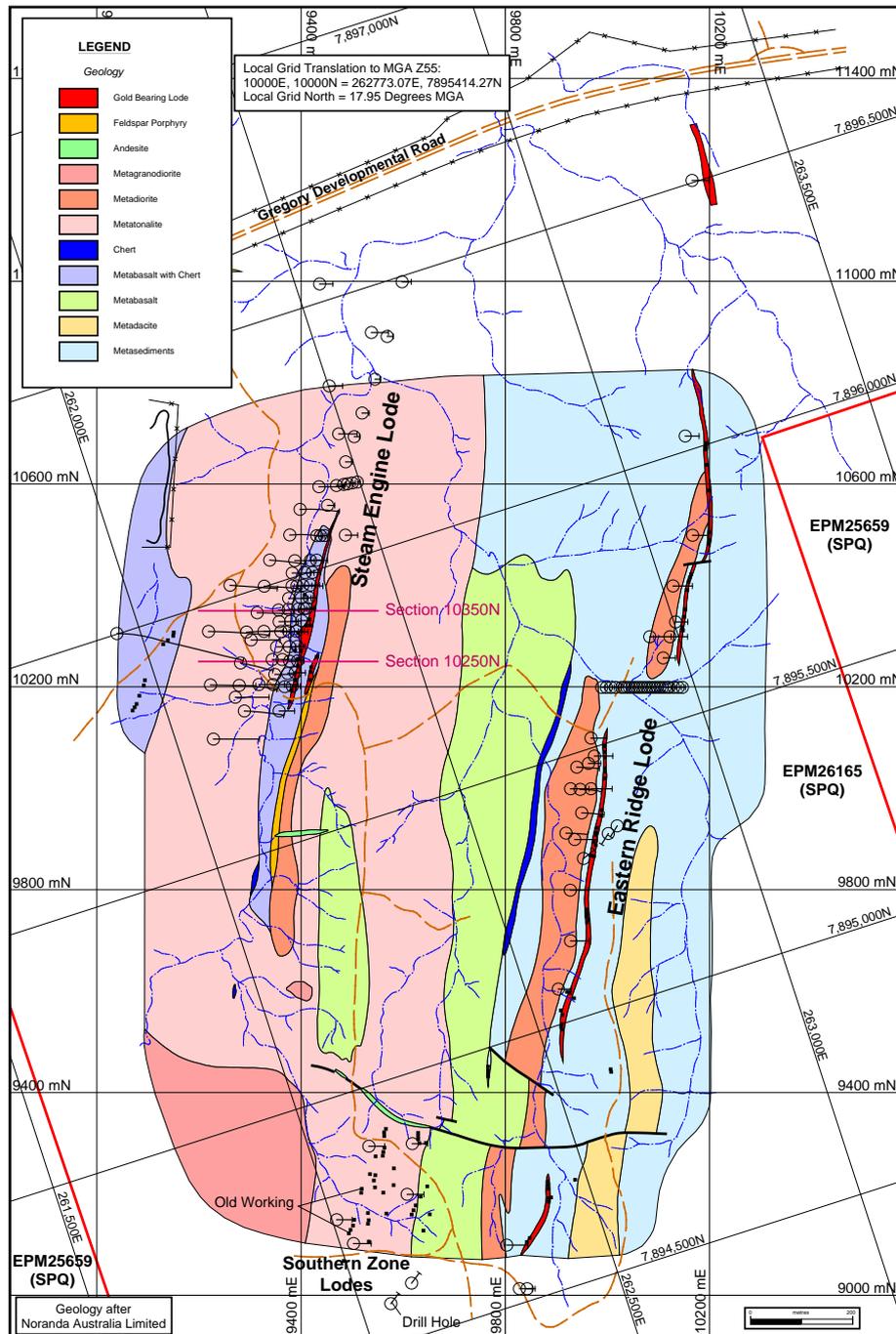


Figure 5. Steam Engine Gold Deposit – Interpreted geology showing the gold-bearing lodes (in red), drill holes and soil gold geochemistry (over the Eastern Ridge Lode and Southern Zone).



**Historical drilling**

Steam Engine was discovered by Noranda Australia Limited in 1983 with the first drilling being undertaken in 1985. Substantial drilling of the deposit established a resource following which, the area was covered with a Mineral Development Licence (MDL107) in 1991.

MDL107 has been held by various parties until it was recently relinquished along with a surrounding EPM making the area available for application.

Most of the historical drilling at Steam Engine has been concentrated on the Steam Engine Lode. Approximately 75 holes have been drilled into and adjacent to the Steam Engine Lode, including 45 reverse circulation holes and 12 diamond drill holes. The drilling shows that the gold mineralisation dips consistently to the west at about 55° and that it has good continuity.

The drilling on the Steam Engine Lode is generally restricted to the near surface zone down to about 120m vertical depth. Only one hole (LSDD003) has been drilled to any significant depth. This diamond drill hole intersected the lode between 348.4m and 350.5m down hole with 2.1m @ 5.54g/t Au intersected (true width approximately 2.0m). This is at a vertical depth of about 220m below surface showing that the lode continues at least to this depth.

**2017 Drilling at the Steam Engine Lode**

Six RC drill holes totalling 510 metres were drilled at the Steam Engine Gold Project. Each of the holes intersected gold mineralisation. The successful drilling program extends the mineralised envelope along strike and at depth at the Steam Engine Lode and extends the depth extent of a portion of the Eastern Ridge Lode.

At the **Steam Engine Lode**, two holes were drilled to the north of the main area of historical resource drilling undertaken by Noranda Australia and others. There is good potential for additional gold resources on the Steam Engine Lode to the north of the area of detailed drilling (Figure 6). Summary results of the drilling at the Steam Engine Lode are set out in Table 2.

*Table 2. Gold intersections from the September Quarter drilling of the Steam Engine Lode<sup>#</sup>*

Hole Name	From (m)	To (m)	Length (m)	Gold (g/t Au)
SSERC005	70	72	2	1.90
SSERC006	66	68	2	2.79
SSERC006	90	94	4	2.34

*# Drill hole intersections have been calculated using a cut-off of 1g/t with no included material below the cut-off. True widths of intersections are approximately 0.9 times the intersection lengths shown in the table.*

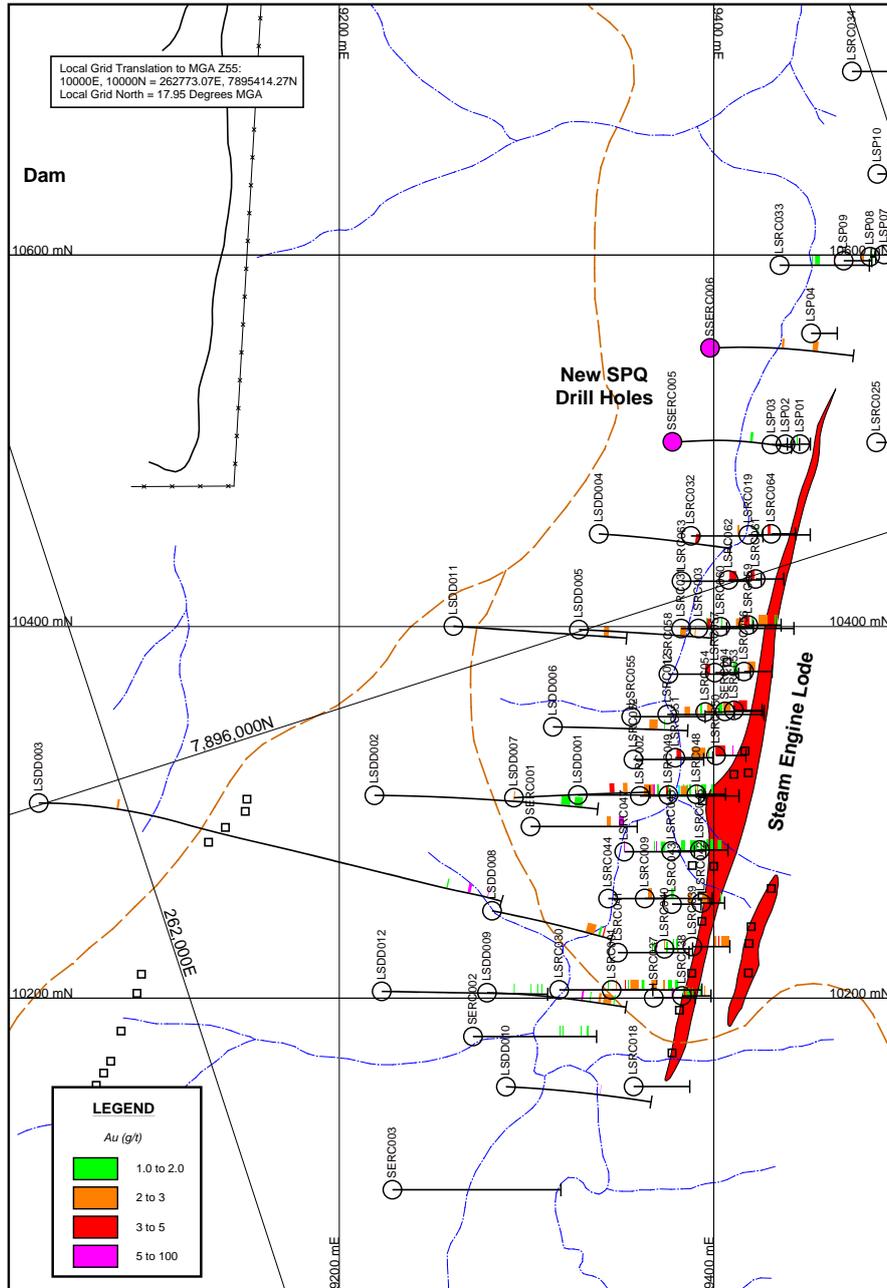


Figure 6. Steam Engine Lode – Gold bearing lodes and drill holes.

## INVESTMENTS

Superior maintains an exposure in relation to ASX listed uranium focused company, Deep Yellow Limited (ASX:DYL). As at 31 December 2017, the company holds 350,000 DYL shares with a closing value of \$112,000.

## ASX Listing Rule 5.3.3

Appendix 1 sets out information that is required under ASX Listing Rule 5.3.3 (for exploration entities).



**Peter Hwang**  
**Managing Director**

Contact:

Mr Peter Hwang  
Ph: (07) 3847 2887

Further Information:

[www.superiorresources.com.au](http://www.superiorresources.com.au)  
[manager@superiorresources.com.au](mailto:manager@superiorresources.com.au)

**Forward looking statements:** This document may contain forward looking statements. Forward looking statements are often, but not always, identified by the use of words such as “seek”, “indicate”, “target”, “anticipate”, “forecast”, “believe”, “plan”, “estimate”, “expect” and “intend” and statements that an event or result “may”, “will”, “should”, “could” or “might” occur or be achieved and other similar expressions. Indications of, and interpretations on, future expected exploration results or technical outcomes, production, earnings, financial position and performance are also forward-looking statements. The forward-looking statements in this presentation are based on current interpretations, expectations, estimates, assumptions, forecasts and projections about Superior, Superior’s projects and assets and the industry in which it operates as well as other factors that management believes to be relevant and reasonable in the circumstances at the date that such statements are made. The forward-looking statements are subject to technical, business, economic, competitive, political and social uncertainties and contingencies and may involve known and unknown risks and uncertainties. The forward-looking statements may prove to be incorrect. Many known and unknown factors could cause actual events or results to differ materially from the estimated or anticipated events or results expressed or implied by any forward-looking statements. All forward-looking statements made in this presentation are qualified by the foregoing cautionary statements.

**Disclaimer:** Superior and its related bodies corporate, any of their directors, officers, employees, agents or contractors do not make any representation or warranty (either express or implied) as to the accuracy, correctness, completeness, adequacy, reliability or likelihood of fulfilment of any forward-looking statement, or any events or results expressed or implied in any forward looking statement, except to the extent required by law. Superior and its related bodies corporate and each of their respective directors, officers, employees, agents and contractors disclaims, to the maximum extent permitted by law, all liability and responsibility for any direct or indirect loss or damage which may be suffered by any person (including because of fault or negligence or otherwise) through use or reliance on anything contained in or omitted from this presentation. Other than as required by law and the ASX Listing Rules, Superior disclaims any duty to update forward looking statements to reflect new developments.



## Appendix 1

### DISCLOSURES UNDER ASX LISTING RULE 5.3.3

#### Mining tenements held at the end of the quarter and their location

State	Tenement Name	Tenement ID	Location	Interest	Holder	Comments
QLD	Hedleys 2	EPM15670	Nicholson	100%	SPQ	Granted
QLD	Hedleys South	EPM18203	Nicholson	100%	SPQ	Granted
QLD	Harris Creek	EPM18840	Victor	100%	SPQ	Granted
QLD	Tots Creek	EPM19097	Victor	100%	SPQ	Granted
QLD	Scrubby Creek	EPM19214	Victor	100%	SPQ	Granted
QLD	Cockie Creek	EPM18987	Greenvale	100%	SPQ	Granted
QLD	Cassidy Creek	EPM19247	Greenvale	100%	SPQ	Granted
QLD	Dinner Creek	EPM25659	Greenvale	100%	SPQ	Granted
QLD	Wyandotte	EPM25691	Greenvale	100%	SPQ	Granted
QLD	One Mile	ML6750	Greenvale	100%	SPQ	Granted
QLD	Tomahawk Creek	EPM25264	Victor	100%	SPQ	Granted
QLD	W Creek	EPM25843	Victor	100%	SPQ	Granted
QLD	Cockie South	EPM26165	Greenvale	100%	SPQ	Granted
QLD	Victor Extended	EPM(A)26720	Victor	100%	SPQ	Application
QLD	Twelve Mile Creek	EPM(A)26751	Greenvale	100%	SPQ	Application

#### Beneficial percentage interests held in farm-in or farm-out agreements at end of the quarter

State	Project Name	Agreement Type	Parties	Interest held at end of quarter by exploration entity or child entity	Comments
QLD	Tick Hill Gold Project	Farm-in Agreement	SPQ and DRX	0%	ML7094, ML7096 and ML7097
QLD	Nicholson Project	Farm-out JVA	SPQ and Teck Australia Pty Ltd	100%	EPM15670 and EPM18203 ASX announcements 3/11/15 and 14/11/16

#### Abbreviations:

EPM	Queensland	Exploration Permit for Minerals
EPM(A)	Queensland	Exploration Permit for Minerals (Application)
ML	Queensland	Mining Lease
SPQ		Superior Resources Limited
DRX		Diatreme Resources Limited
JVA		Joint Venture Agreement