

# Superior Resources Limited

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## QUARTERLY ACTIVITIES REPORT Period ending 30 June 2017

### HIGHLIGHTS

- **Greenvale Project – completion of initial drilling program**
  - drilling program completed 29 July 2017.
  - Visible and encouraging mineralisation in drill chips resulted in extending the total meterage of the drilling program.
- **Nicholson Project – Teck Australia Pty Ltd – Earn-in and JV – completed Aboriginal cultural heritage surveys over follow-up AMT survey program area.**
- **Capital Raising – \$477,863.88** raised from a placement to sophisticated investors.

### Project Locations



### 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 – 463,421,804  
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

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Brisbane, QLD, 4000

#### Web Site

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

#### Contact

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Carlos Fernicola  
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## SUMMARY

The main operational and corporate activities of Superior Resources Limited (**Superior** or **Company**) during the period comprised the following:

- preparation of drilling and field programs for the Steam Engine, Bottletree, Galah Dam and One Mile Dam prospects at the Company's Greenvale Project;
- Nicholson Project – Teck Australia Pty Ltd (**Teck**) – Earn-in and JV – completion of Aboriginal cultural heritage surveys for a follow-up AMT geophysical survey; and
- completion of a placement capital raising to raise a total of \$477,863.88 before costs.

## PROJECT OPERATIONS

### Greenvale Project

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).

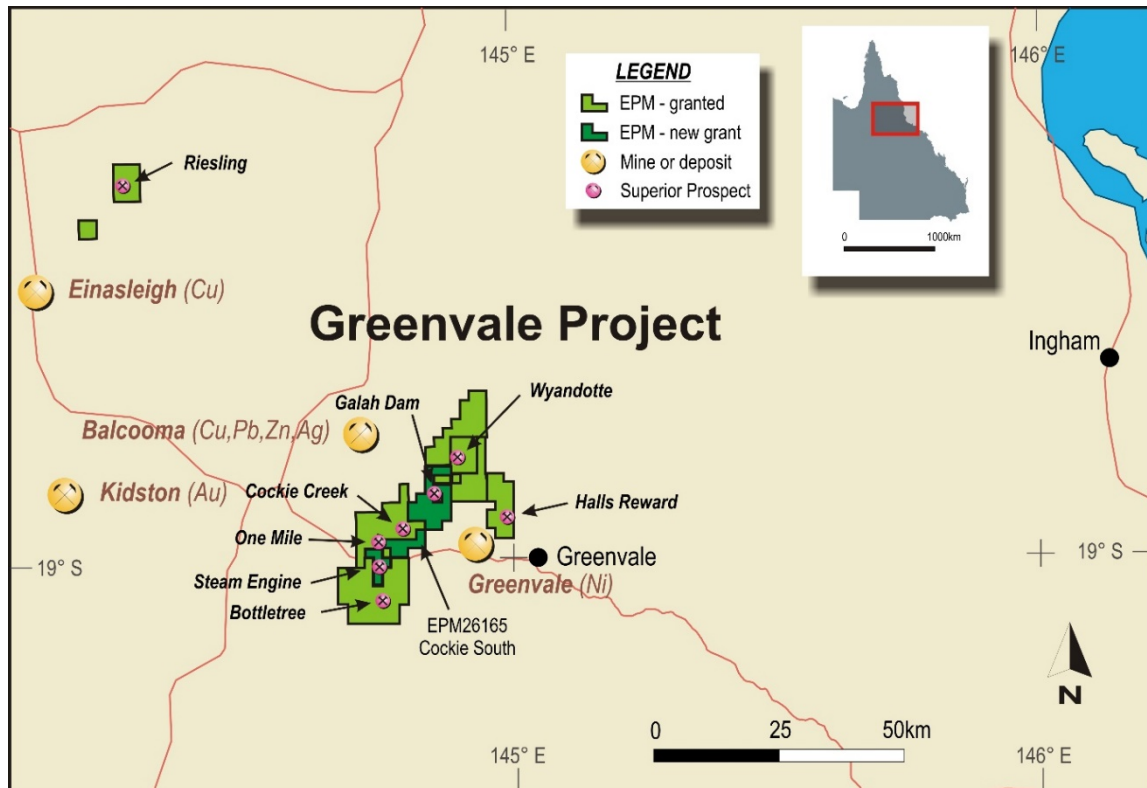


Figure 1. Location of the Greenvale Project tenements showing the location of Superior's recently granted Cockie South tenement (in dark green).



## Greenvale Drilling Program

Work during the quarter comprised preparatory work to facilitate the commencement of an initial 1,000m drilling program on four prospects within the Greenvale Project. The four prospects targeted in the initial program are:

- Steam Engine Gold Deposit (gold);
- Bottletree Prospect (copper);
- Galah Dam Prospect (gold-silver-zinc-copper); and
- One Mile Dam Prospect (copper-gold).

This work included:

- Negotiation of Landowner Access and Compensation Agreements;
- Finalisation of drilling contract and geological services terms;
- Commencement of drill site and access track preparations; and
- Completion of Aboriginal cultural heritage survey and regulatory compliance procedures.

## Field Reconnaissance

An initial field reconnaissance program was conducted during May 2017 over the four prospects, which confirmed widespread and significant areas of surface copper mineralisation at the Bottletree Prospect and several gossanous outcrops in the vicinity of the Galah Dam Prospect.

A total of 12 rock chip reconnaissance samples were taken from various outcrops that were potentially mineralised to establish the presence of metals and any associated elements.

At Galah Dam, a rock chip sample from a gossan outcrop returned anomalously high assays for gold and silver (7.35g/t Au, 25.6g/t Ag) (Table 1).

At the Bottletree prospect, areas of surface copper minerals including malachite and chrysocolla, with distinct vegetation anomalies (including *Eriachne mucronata* [copper grass] and *Polycarpha* [copper weed]), were found to be coincident with high order gradient-array chargeability anomalies. Two rock chip samples from these areas returned assays of up to 2.61% Cu and 0.3g/t Au (Table 1).

A rock chip sample was taken from an old mine dump on the Eastern Ridge Lode at the Steam Engine Prospect, in the vicinity of Superior's proposed drill holes. This sample was taken to confirm that the gold present was hosted by muscovite-quartz-carbonate-pyrite schist. It returned 4.64g/t Au and 1.6g/t Ag.

**Table 1: Assay results (selected elements) of surface rock chip samples from the Bottletree, Galah Dam and Steam Engine prospects (refer to ASX announcement dated 6 July 2017).**

Sample	East MGA	North MGA	Description	Au (g/t)	Ag (g/t)	Cu (%)	Pb (ppm)	Zn (ppm)	Co (ppm)	Al (%)	Mn (ppm)
3008257	263406	7890130	Bottletree Felsic Intrusive	0.30	2.0	2.61	21	209	83	3.41	459
3008258	263396	7890128	Bottletree Felsic Intrusive	0.17	0.7	1.48	<2	131	51	1.90	394
3008268	274361	7911772	Galah Dam Gossan	7.35	25.6	241 (ppm)	138	271	12	0.48	776
3008262	262712	7895295	Steam Engine Muscovite carbonate schist - old mine workings pit	4.64	1.6	218 (ppm)	80	84	13	0.42	1880



## UPDATE – COMPLETION OF DRILLING

As indicated in recent ASX announcements, the Company commenced an initial 1,000 metre drilling program on four of the eight prospects at the Greenvale Project on 10 July 2017. Two of the prospects (Steam Engine, Bottletree and Galah Dam) are located on the recently granted Cockie South (EPM26165) exploration permit (EPM), Bottletree is located on the Dinner Creek EPM (EPM25659) and One Mile Dam is located on the Cockie Creek EPM (EPM18987).

The program of drilling was completed on Saturday, 29 July 2017 with a total of 1,422 metres drilled over the four prospect areas (Figure 2). The program was extended by 422 metres over the initially planned 1,000 metres, partly due to the presence of extensive zones of visible copper mineralisation and strong alteration at the Bottletree Prospect and strongly altered sulphide and massive sulphide intervals in the single hole at the Galah Dam Prospect.

At the Steam Engine Prospect, a total of six holes were drilled for a total of 510 metres, with each hole intersecting at least one zone of gold lode. Laboratory assays results for gold have recently been received from ALS Minerals on 28 July 2017. The Company is currently compiling and analysing the assay results and will report the results to the market shortly.

Overall, the initial drilling program has been highly encouraging. The Company will be informing the results of the drilling as the remaining assay results are received over the next two to four weeks.

A summary of the drilling program and target prospects is set out in Table 2.

Refer also to previous ASX announcements for detailed descriptions of the prospects.



Figure 2. Reverse-circulation drilling at the Company's Bottletree Prospect, July 2017. Aerial view looking southeast.





Table 2. Drilling Program summary.

Prospect	Mineralisation	Exploration History	Historical Drilling	SPQ proposed drilling
<b>Galah Dam</b>	<b>Zinc-Gold-Silver-Copper</b> Potential VMS	Zn, Au, Cu discovered at the “nose” of a large fold system by Homestake Australia Ltd in 1991.  Subsequent drilling by others extended the depth of mineralisation.	<b>Restricted to fold “nose” where there is a weak chargeability geophysical anomaly.</b>  <b>No drilling of the high-order chargeability anomalies, which are targeted by Superior.</b>	<b>1 RC drill hole into a high-order chargeability anomaly supported by a moderate-order conductivity anomaly adjacent to previous drilling.</b>  <b>Not previously drilled.</b>
<b>Steam Engine</b>	<b>Gold</b>  Mineralised parallel shear zones  Steam Engine Lode  Eastern Ridge Lode  Central Lode	Discovered by Noranda Australia in 1983. Extensive drilling established a mineral resource on the main lode (non-JORC compliant).	<b>Near surface – generally up to 120m vertical depth.</b>  <b>One hole drilled to 220m vertical depth confirming presence of the gold lode.</b>	<b>2 RC drill holes into Steam Engine Lode northern extension to:</b>  - confirm extension of the lode to the north; and  - establish a maiden JORC 2012 compliant Mineral Resource.  <b>4 RC holes into Eastern Ridge Lode to confirm width and grade of the lode.</b>
<b>Bottletree</b>	<b>Copper-Gold</b>  Potential porphyry copper  Large 1.5km x 1km high-order soil Cu anomaly	Pancontinental Mining Limited conducted 15 shallow RC holes over the general prospect area, pre-2001.  Drilling indicated up to 0.3% copper and true width of up to 60m.  Gradient array IP geophysical survey by Pancontinental.	<b>Limited shallow RC drill holes over soil geochemical and geophysical anomalies.</b>  <b>Large IP anomaly remains open at depth and along strike.</b>  <b>No systematic follow-up.</b>	<b>3 RC drill holes. Deeper RC drilling across coincident high-order soil geochemical and geophysical anomalies.</b>
<b>One Mile Dam</b>	<b>Copper-Gold-Zinc</b>  Substantial bedrock EM, IP and VTEM geophysical anomaly  Associated with extensive massive sulphide mineralisation at nearby One Mile prospect	MIM Exploration conducted EM and IP geophysical surveys, pre-2001.  Beacon Minerals Limited conducted a VTEM survey, June 2007.	<b>Nil</b>	<b>1 RC drill hole to target substantial bedrock EM, IP and VTEM anomaly at 200m down-hole depth.</b>  <b>1 RC drill hole to target shallower intense EM and IP anomaly.</b>



## Teck Australia Earn-in and Joint Venture – Nicholson Zinc-Lead-Silver Project

During the previous Quarter, final results from an initial Audio-frequency Magneto-Telluric (AMT) geophysical survey were received from Teck Australia Pty Ltd (Teck).

The results of the initial AMT survey indicate that permissive rock packages are believed to be detected to a depth of 1000m and located in the hanging-wall of the major Nicholson River (growth) Fault.

Survey line #1 (Figure 3) identified a conductive anomaly at a depth of between 200 and 500 metres, which is interpreted by Teck to be hosted by the same geological package which hosts the Century Zinc Mine (Figure 4).

### 2017 Field Program

The initial focus for 2017 field season will be to further characterise the currently identified AMT features with AMT surveying and subject to results and budgetary and timing constraints, possibly drill the highest priority AMT target.

Work completed during the Quarter comprised:

1. Completion of an Aboriginal cultural heritage survey over planned follow-up infill AMT lines; and
2. Finalised contract terms with Zonge Engineering and Research Organization (Aust) Pty Ltd to conduct the broadband AMT survey during July 2017.

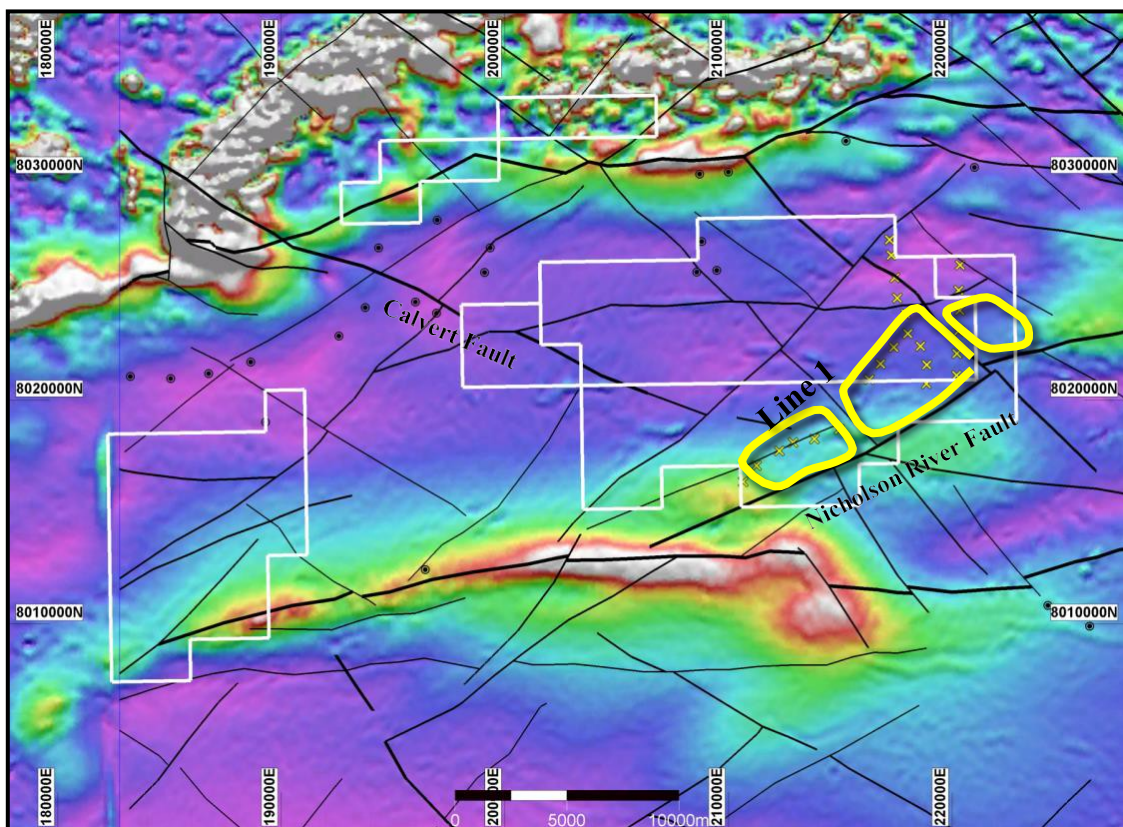


Figure 3. Interpreted sub-basins (outlined in yellow) and AMT survey lines (yellow crosses) superimposed on RTP magnetics and major structural features. AMT survey line #1, which traverses the two central sub-basins is labelled (2016 Nicholson Annual Report, Teck Australia Pty Ltd).

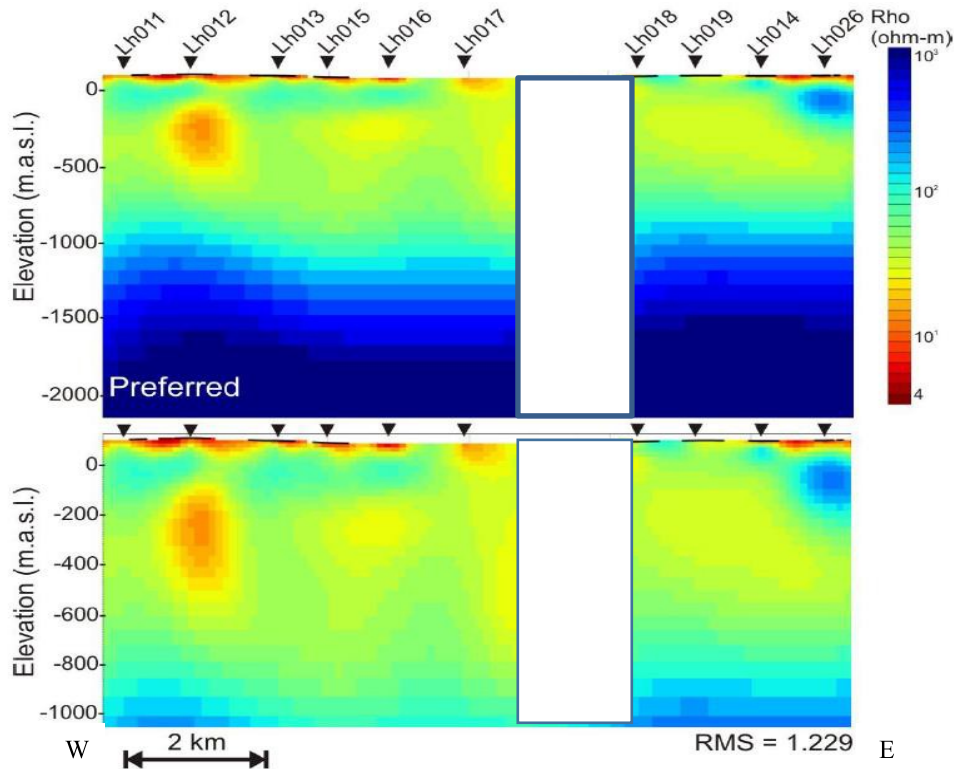


Figure 4. AMT survey line #1 – 2D inversion modelling of AMT data presented in section showing the variation of interpreted conductivity with depth. The top image is modelled to 2km and the bottom image modelled to 1km. AMT anomaly clearly present at station Lh012 (2016 Nicholson Annual Report, Teck Australia Pty Ltd).

The proposed AMT survey (figure 5) is designed to:

- Follow up the single point anomalism from the 2016 AMT survey (AMT survey line #1) (Figure 4);
- Survey over Superior’s existing Walford South drill hole in order to assist in constraining the AMT results; and
- Survey the intersection between the Nicholson Fault and the prospective Mt Les stratigraphy (eastern Line).

### Background: Nicholson Project – Teck JVA

Teck, a wholly-owned subsidiary of Canada’s largest diversified resource company, Teck Resources Limited, commenced exploration work on Superior’s Nicholson Project (**Project**) during the March quarter of 2016. Teck is conducting the work under an Earn-in and Joint Venture Agreement (**JVA**) with Superior that was entered into during October 2015.

The Nicholson Project (EPM15670 and EPM18203), located near the Walford Creek lead-zinc-silver-copper deposit, is considered to have the potential to contain sediment-hosted lead-zinc-silver massive sulphide deposits (**SHMS**), similar to Mount Isa and McArthur River (Figure 6).

Previous drilling by Superior of the Walford South Prospect confirmed the presence of substantial amounts of pyritic shale containing elevated zinc, which can be associated with SHMS deposits. An airborne VTEM survey conducted by Superior over the Project identified moderately deep conductivity anomalies at the Nicholson West and Kingfisher East prospects in a sequence similar to that hosting the Walford Creek deposit. This, together with outcropping rocks containing vein-lead mineralisation, supports the potential for the Project to host SHMS zinc-lead-silver mineralisation.

## Earn-in and Joint Venture Agreement

Under the original terms of the JVA, Superior granted Teck with the right to earn a 70% interest in the Nicholson Project by:

- (Initial Period) – spending \$250,000 by 30 September 2016 (subsequently extended to 31 December 2016), with a mechanism to extend the period depending on the date of renewal of EPM15670; and
- (Earn-In Period) – spending a further \$2,250,000 by 31 December 2018.

During November 2016 Teck confirmed that it had completed the \$250,000 expenditure for the Initial Period and that it will commit to the Earn-in Period, which requires expenditure of a further \$2,250,000 on or before 31 December 2018 (refer ASX Announcement 14 November 2016).

At the end of the Quarter, Teck had spent an approximate total of \$385,000 on the project.

The Earn-in and Joint Venture Agreement was entered into with Teck on 9 October 2015 (refer ASX announcement 3 November 2015).

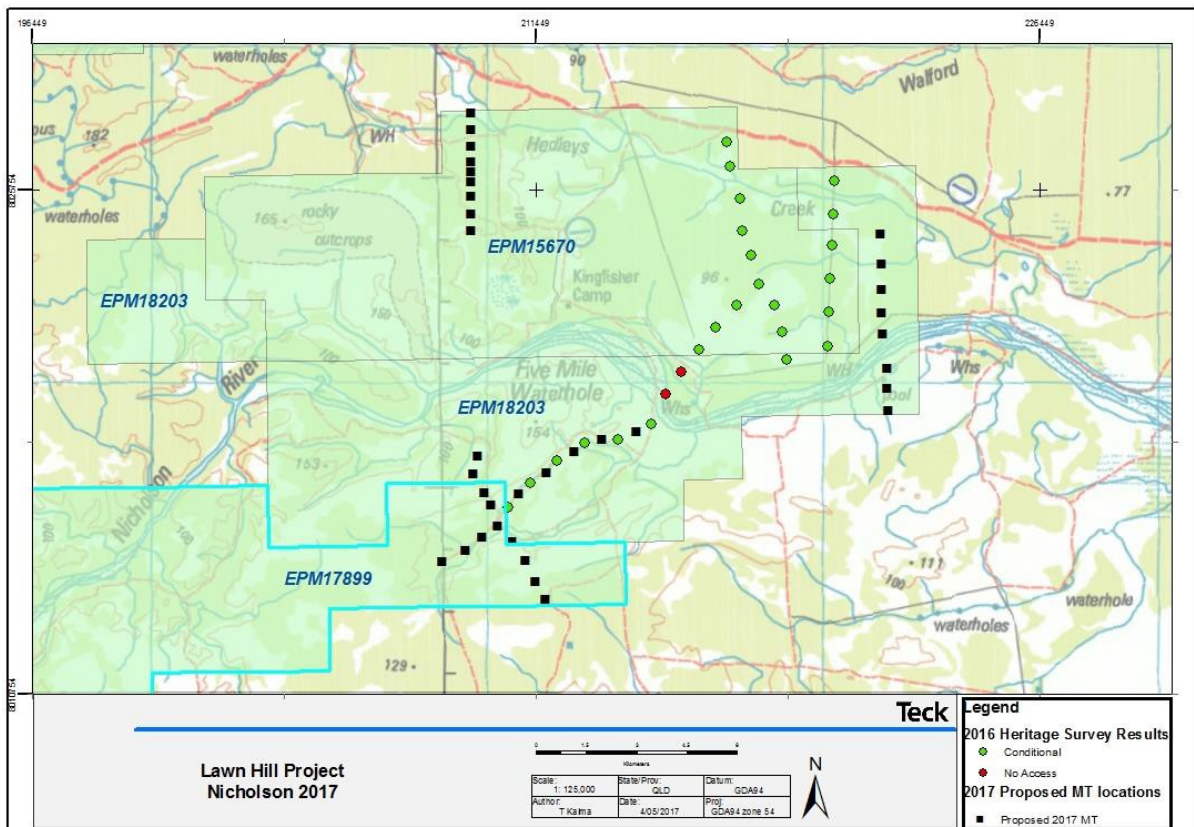


Figure 5. Location of planned AMT stations (black squares). Green circles are existing AMT stations from the 2016 survey. Red circles are proposed stations that did not receive heritage clearance. Note that EPM17899 is a 100% Teck tenement.



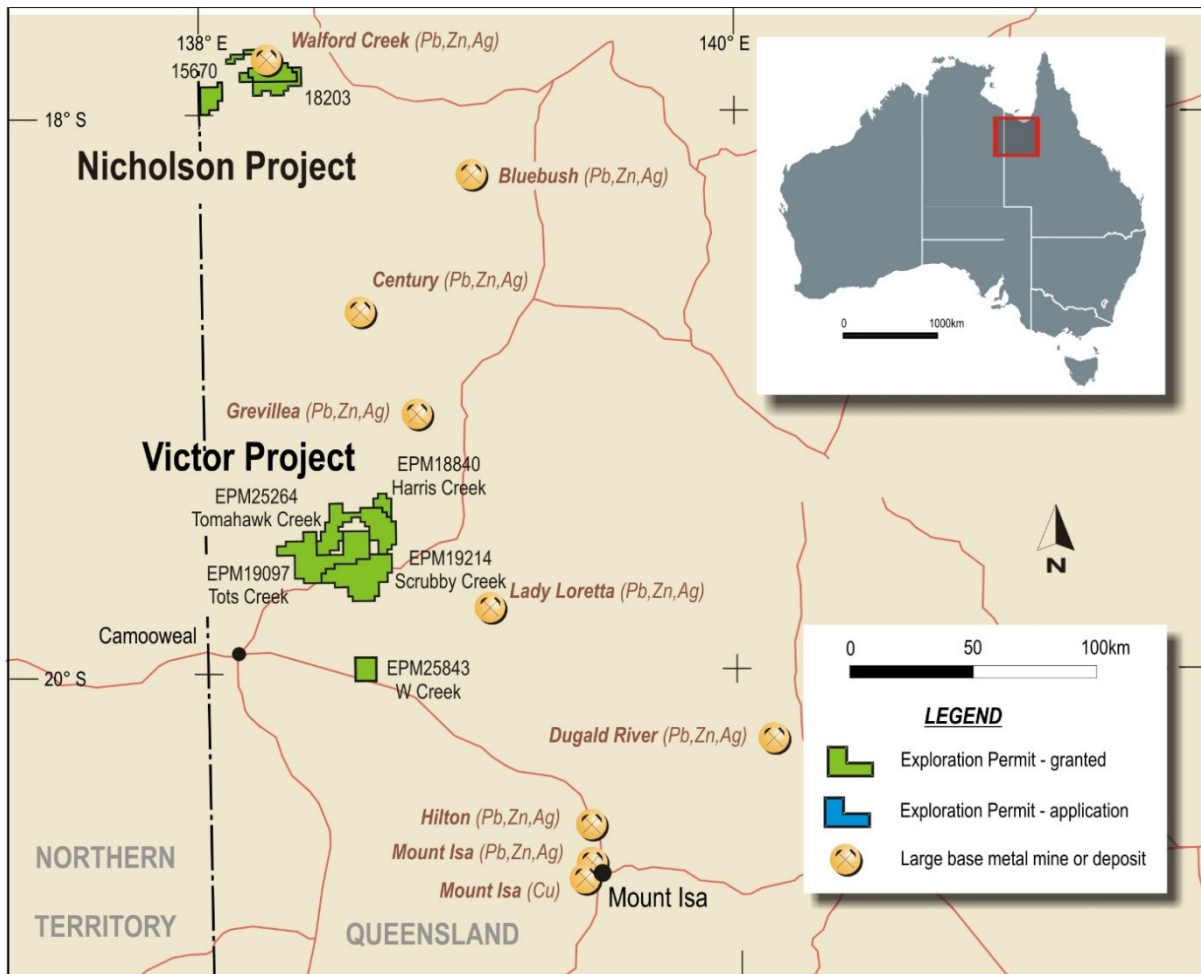


Figure 6. Location of the Nicholson Project tenements, also showing the location of Superior's 100% Victor Project.

## CORPORATE

The Company completed a capital raising by the placement of 86,000,000 fully paid ordinary shares at an issue price of \$0.0055 per share to sophisticated investors during April 2017. A total of \$477,863.88 was raised.

The purpose of the capital raising was to:

- fund the drilling of the Eastern Ridge Lode to identify additional gold mineralisation at the Steam Engine Gold Deposit;
- conduct validation and exploration work to confirm a JORC 2012 compliant mineral resource for the Steam Engine Gold Deposit;
- fund the phase 1 drilling of priority EM geophysical targets at the Galah Dam zinc-gold-copper Prospect; and
- provide working capital.

The Placement was made to investors qualifying under section 708(8) of the *Corporations Act 2001* (Cth), utilising the Company's existing capacity under Listing Rules 7.1 and 7.1A.



## INVESTMENTS

Superior maintains an exposure in relation to ASX listed uranium focused company, Deep Yellow Limited (ASX:DYL). As at 30 June 2017, the company holds 350,000 DYL shares with a closing value of \$98,000.

### ASX Listing Rule 5.3.3

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

A handwritten signature in black ink, appearing to read 'Peter Hwang'.

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

Contact:

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Further Information:

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## Appendix 1

### DISCLOSURES REQUIRED 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

- 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