Superior Resources Limited

ACN 112 844 407

ASX Release
25 October 2018

# HIGH GRADE COPPER INTERSECTED IN FIRST DEEP DRILLING AT BOTTLETREE PROSPECT, GREENVALE PROJECT

# THICK 292m INTERVAL OF COPPER MINERALISATION TOGETHER WITH NEW 3D GEOPHYSICAL MODEL IDENTIFIES POTENTIAL FOR SIGNIFICANT COPPER ORE BODY

- **High grade copper mineralisation of 18.7m @ 1.12% copper.**
- **Broad zone of copper mineralisation intersected in hole SBTRD006 totalling 292m @ 0.22% copper.**
- **The copper intersections and 3D modelling indicate a large copper target lies at depth and to the immediate south of hole SBTRD006.**
- **Results from the diamond drilling suggest that the copper mineralisation may be of VMS style rather than porphyry copper style.**

Superior Resources Limited (ASX Code: **SPQ**) (**Superior** or **Company**) is pleased to provide a further update on drilling completed in August at the Bottletree Prospect, located 25km west-southwest of the town of Greenvale and 220kms west of Townsville in north east Queensland (Figure 5).

The objective of the drilling program was to determine whether the large and high-order induced polarisation (**IP**) chargeability anomalies identified from a MIMDAS IP geophysical survey completed in May (ASX Announcement - 16 May 2018) were caused by significant copper and gold mineralisation.

In an ASX release on 29 August 2018, Superior advised that a considerable amount of sulphide mineralisation had been intersected in hole SBTRD006 (**Hole 6**) from the drilling program. Since that report, considerable work has been conducted on the core from Hole 6 including detailed geological and structural logging and splitting of the core for assay. Unusually high volume demands at ALS Laboratories in Townsville caused considerable delays in the assaying process, with final assays only received recently.

Additional work completed since the drilling has included more advanced modelling of the results from the MIMDAS IP survey to generate a 3D model of chargeability and conductivity of the surveyed area to guide the next drilling program.

## Assay Results

All assay results from Hole 6 have now been received. The results show copper mineralisation present in Hole 6 over a broad interval:

- Average grade: **292m @ 0.22% Cu (148.0m to 440.0m)** (Cut-off of 0.1% Cu but with some narrow intervals of less than 0.1% Cu included); and
- High grade zones, including: **18.7m @ 1.12% Cu (328.0m to 346.7m)**.

Mineralised intervals for Hole 6 including high grade zones are summarised in Table 1.

Unit 8, 61 Holdsworth Street, Coorparoo Queensland 4151 | PO Box 189, Coorparoo, Queensland, 4151
T 07 3847 2887 | E manager@superiorresources.com.au | www.superiorresources.com.au | ABN 72 112 844 407

**Advanced 3D Modelling**

Advanced 3D modelling of the MIMDAS survey results indicate a close correlation between the copper grades and chargeability. A cross section generated along survey line 2400N and a long section along 3180E indicate that the drilling to date has penetrated the edges of the main IP target zone (Figures 1 and 2). Based on the correlation between the IP data and the drill hole assay results, higher grade copper mineralisation is expected to be encountered within the main chargeable target zone, which is located to the south of Hole 6 and also at deeper levels.

The limits to this large copper mineralised system have not yet been delineated and it remains open both laterally and at depth.

Superior's Managing Director, Peter Hwang commented:

*"Bottletree is shaping up to be a significant copper deposit that is delivering both size and grade potential. The latest assay and 3D modelling results together identify Bottletree's potential to deliver further high grade copper and substantially increased mineralisation tonnage during the next program of drilling. The currently known size of the chargeability anomaly appears to be at least 1 kilometre in strike length and drilling has only just commenced in earnest. In addition, we are also very pleased that the information extracted from the recent drilling has enhanced the potential for nickel-cobalt mineralisation within the greater Greenvale Project area and in particular, the Big Mag Prospect, which is expected to be granted in January 2019. We will in the meantime, be vigorously progressing the next stage of drilling at Bottletree and preparations to bring the Big Mag target online".*

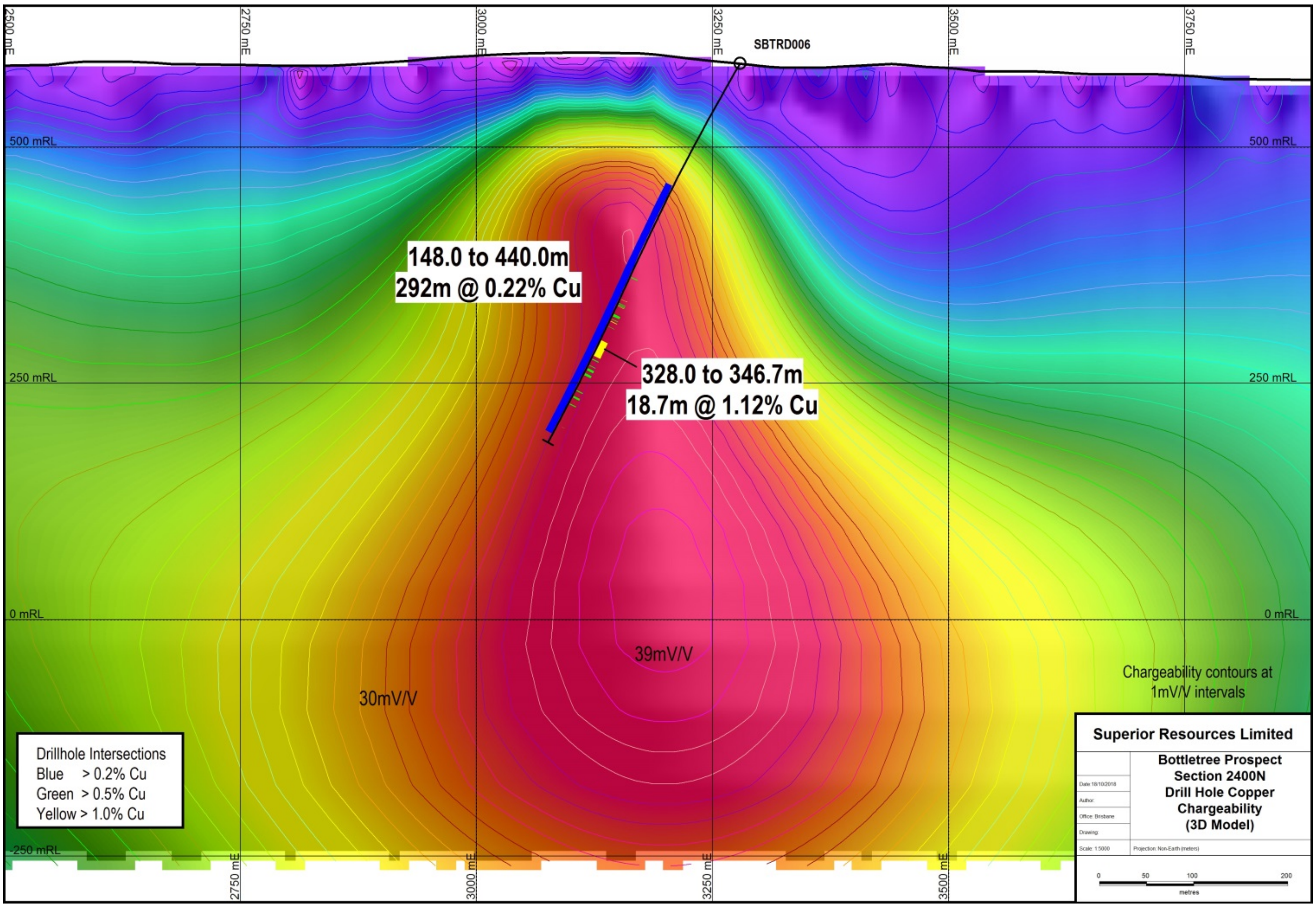


*Figure 1. Bottletree cross-section 2400N through hole SBTRD006 showing copper intersections on a background image of chargeability from the new 3D model of the MIMDAS IP survey.*

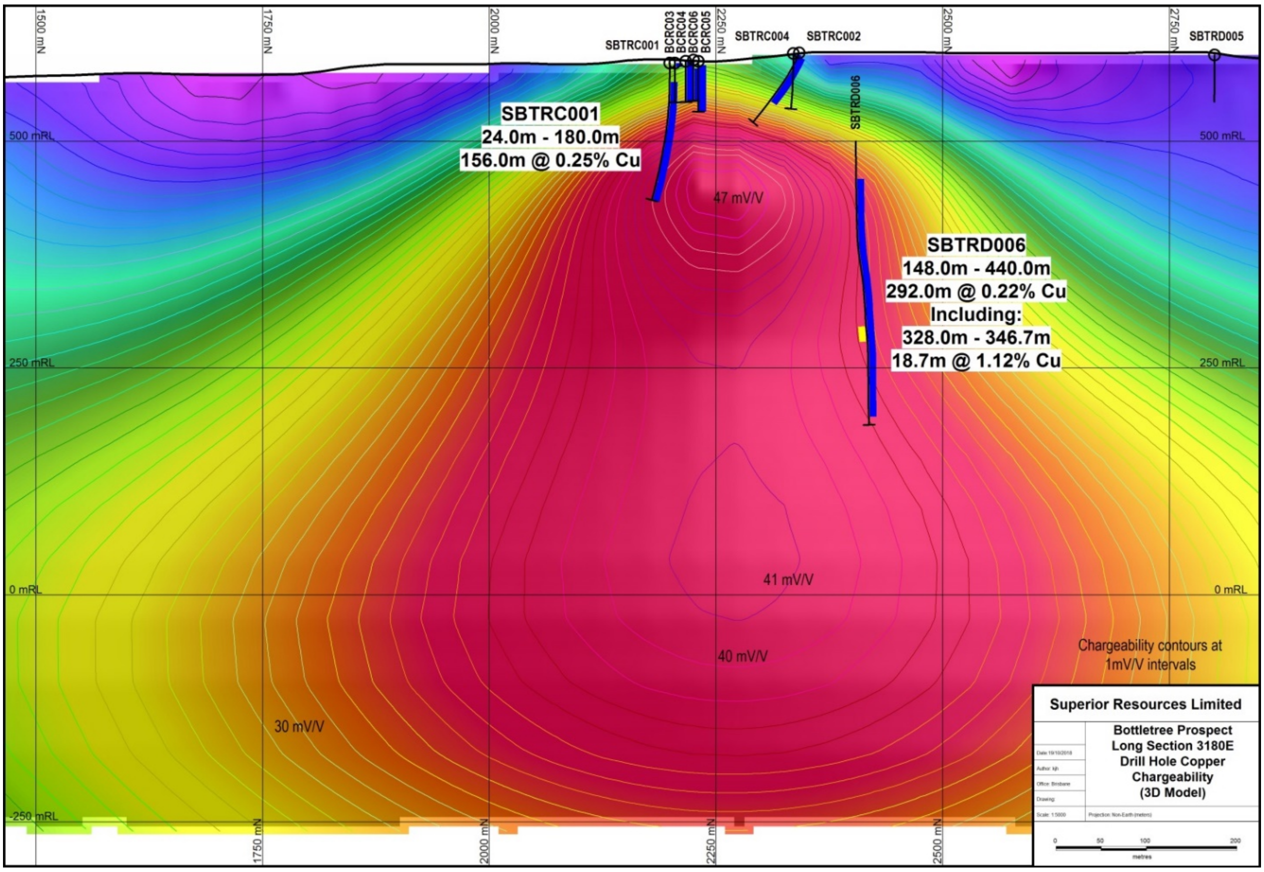


*Figure 2. Bottletree long-section 3180E through hole SBTRD006 and other holes showing copper intersections on a background image of chargeability from the new 3D model of the MIMDAS IP survey.*

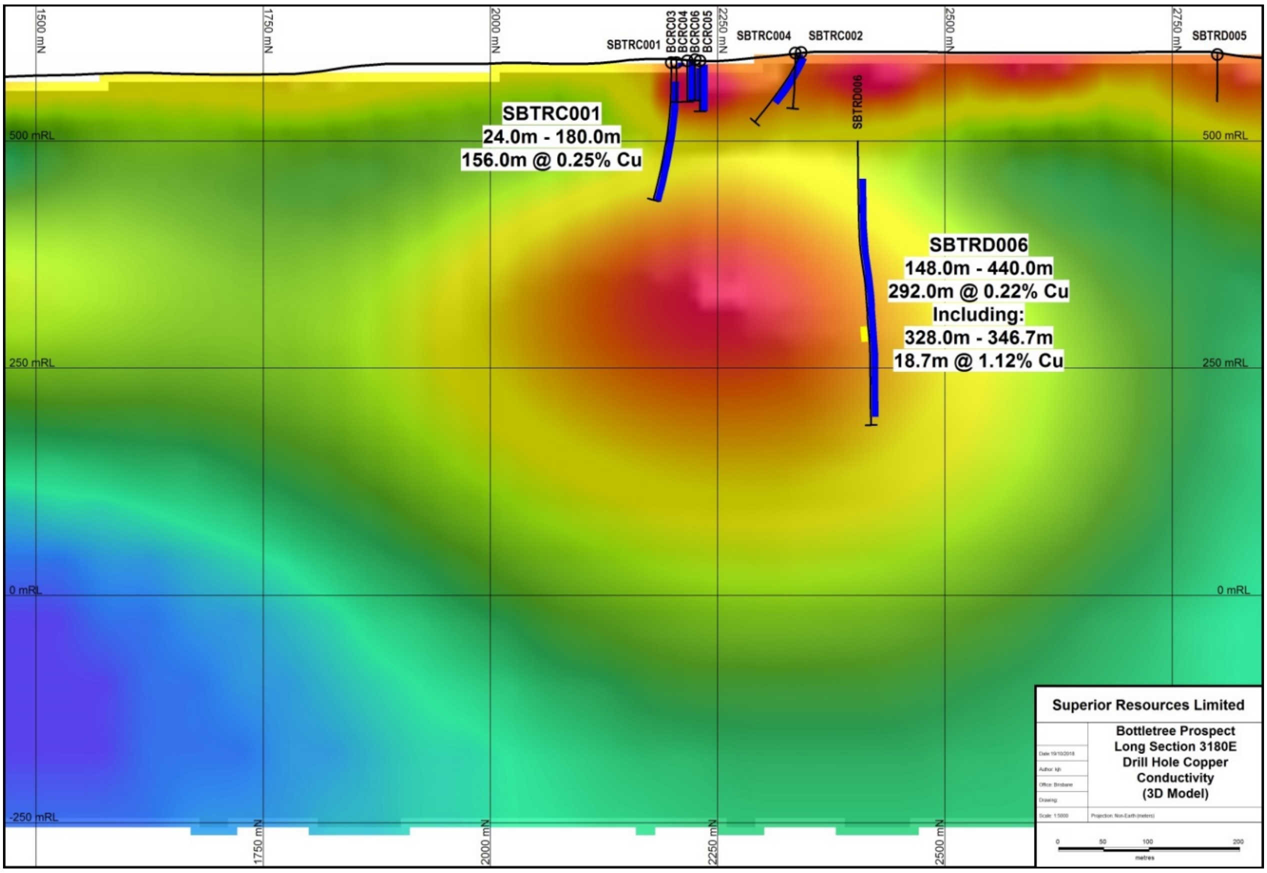


*Figure 3. Bottletree long-section 3180E through hole SBTRD006 and other holes showing copper intersections on a background image of conductivity from the new 3D model of the MIMDAS IP survey.*

**Bottletree Assay Results and MIMDAS 3D Modelling**

All assay results from Hole 6 have now been received. The results show copper mineralisation present in Hole 6 over a broad 292m interval from 148.0m to 440.0m. The average grade over the 292m interval is 0.22% copper (calculated over the interval with a cut-off of 0.1% Cu but with some narrow intervals of less than 0.1% Cu included). Higher grades exist within the 292m interval with the best of these being an 18.7m interval between 328.0m and 346.7m of 1.12% copper. Detailed geological logging shows that the copper mineralisation occurs mostly within quartz-sulphide veins containing chalcopyrite, pyrite and pyrrhotite. The host rocks to the mineralisation are a sequence of volcanics ranging from basalts to dacites in composition with basalts dominating.

The detailed structural logging from oriented core from the hole shows the mineralised veins have a variety of orientations but with most having steep dips.

Sections through Hole 6 are included in Figures 1, 2, and 3. All sections show the relationship of the broader 292m intersection of lower-grade copper and the 18.7m intersection of higher grade copper overlying sectional images of the advanced 3D model of results from the MIMDAS survey.

Figure 1 is a cross section of Hole 6 on 2400N showing the copper mineralisation with a background image of chargeability from the new advanced 3D model. This section indicates that there is a close agreement between copper mineralisation in Hole 6 and chargeability, which gives greater confidence that drilling of the higher chargeability zones from the 3D model will produce higher copper grades.

Figure 2 is a long section through the long axis of the 3D chargeability anomaly along 3180E showing Hole 6 as well as other holes drilled along this section line and projected onto the section. Broader copper mineralised intervals above 0.2 % copper and the higher-grade (+1%) copper interval in Hole 6 are plotted on this section. This section confirms the close agreement between copper mineralisation and chargeability. It is apparent from this section that the drilling to date has essentially been around the edges of the main target zone indicated from the 3D modelled chargeability which lies at depth to the south of Hole 6.

***Table 1. Drill hole SBTRD006 intersections based on a cut-off of 0.5% copper (except for record 1 which is based on a cut-off of 0.1% copper (with some narrow intervals of less than 0.1% copper included).***

| Hole | From | To | Length | Cu (%) | Au (g/t) | Ag (g/t) |
|---|---|---|---|---|---|---|
| **SBTRD006** | **148.0** | **440.0** | **292.0** | **0.22** | **0.02** | **0.69** |
| **Including:** | | | | | | |
| SBTRD006 | 254.0 | 255.0 | 1.0 | **0.82** | 0.26 | 4.4 |
| SBTRD006 | 280.0 | 280.3 | 0.3 | **1.98** | 0.36 | 10.2 |
| SBTRD006 | 284.6 | 285.2 | 0.6 | **0.62** | 0.10 | 2.5 |
| SBTRD006 | 286.0 | 287.0 | 1.0 | **0.69** | 0.13 | 2.7 |
| SBTRD006 | 287.9 | 288.2 | 0.3 | **1.05** | 0.24 | 5.2 |
| SBTRD006 | 297.4 | 300.1 | 2.7 | **0.90** | 0.13 | 3.6 |
| SBTRD006 | 303.0 | 303.6 | 0.6 | **0.85** | 0.40 | 4.1 |
| SBTRD006 | 305.5 | 306.2 | 0.7 | **1.53** | 0.19 | 7.3 |
| SBTRD006 | 311.5 | 312.1 | 0.6 | **0.90** | 0.10 | 3.4 |
| **SBTRD006** | **328.0** | **346.7** | **18.7** | **1.12** | **0.09** | **4.4** |
| SBTRD006 | 349.8 | 351.0 | 1.2 | **0.74** | 0.05 | 2.1 |
| SBTRD006 | 357.3 | 358.0 | 0.8 | **0.60** | 0.02 | 0.8 |
| SBTRD006 | 361.0 | 363.5 | 2.5 | **0.69** | 0.09 | 1.9 |
| SBTRD006 | 367.0 | 369.5 | 2.5 | **0.86** | 0.13 | 2.3 |
| SBTRD006 | 387.0 | 388.1 | 1.1 | **0.90** | 0.03 | 2.5 |
| SBTRD006 | 394.0 | 396.0 | 2.0 | **0.58** | 0.01 | 1.6 |
| SBTRD006 | 403.0 | 404.0 | 1.0 | **0.55** | 0.03 | 1.6 |
| SBTRD006 | 428.9 | 429.1 | 0.3 | **1.08** | 0.01 | 1.1 |

Figure 3 is the same long section as in Figure 2 but with a background conductivity image from the new advanced 3D model. This section confirms a target zone broadly consistent with that indicated by the chargeability in Figure 2.

**Other observations from the drilling program**

Other results from the work are that the basalts in the host sequence to the mineralisation are a combination of lavas and volcanoclastics with compositions varying from ordinary basalts to high iron and high magnesium basalts. The basalt lavas often show pillows which indicate that they are of submarine origin. While it has yet to be confirmed by petrology, the geochemistry completed on the core indicates that some of the basalt lavas may be boninite. Most boninite magma is considered to be formed by second stage melting in forearcs via hydration of previously depleted mantle within the mantle wedge above a subducted slab containing already depleted peridotite. The presence of boninite further confirms that the rocks forming most of Superior's Greenvale project are mantle derived as previously indicated. The presence of boninite also supports the interpretation that the ultramafic rocks in the Greenvale area are part of a mantle wedge rather than alpine type serpentinites. This has implications for nickel and cobalt mineralisation potential in the Greenvale Project area and specifically for Superior's Big Mag Prospect.

No intrusive rocks occur with the copper mineralisation which might be expected if the copper mineralisation was of porphyry copper style. In addition, significant molybdenum mineralisation was not associated with the copper mineralisation intersected. This raises some doubt about the porphyry copper model that is being used at Bottletree and increases the prospect that the mineralisation is of the volcanogenic massive sulphide (**VMS**) type. If the mineralisation is of the VMS style, the quartz-sulphide vein copper mineralisation intersected would fall neatly into the stringer zone type which typically lies in the footwall of massive sulphide deposits.

Massive sulphides in VMS deposits are usually conductive and this draws attention to the conductivity anomaly in the 3D model which is shown in Figure 3. Massive sulphide zones in VMS deposits hosted in basic volcanics often contain high copper grades.

The encouraging results from Hole 6 with intersection of 18.7m of 1.12% copper in a broad interval of low-grade copper, along with the presence of a high-order 3D chargeability anomaly with support from the 3D conductivity anomaly, enhances the potential of the Bottletree Prospect for high-grade copper mineralisation. Further drilling of the shallower parts (above 500m depth) of the chargeability and conductivity anomalies from the advanced 3D model derived from the MIMDAS IP survey is strongly recommended and deeper drilling should also be considered once the shallower drilling is completed.

The locations of the drill holes completed in the drilling program are shown in Table 2 and in Figure 4.

***Table 2. Drill hole collar locations and collar survey information.***

| Hole ID | Easting | Northing | Dip | Azimuth | EOH Depth |
|---|---|---|---|---|---|
| **SBTRD005** | 263104 | 7890649 | -60° | 245.2° | 651.7m |
| **SBTRD006** | 263433 | 7890364 | -60° | 245.2° | 450.4m |

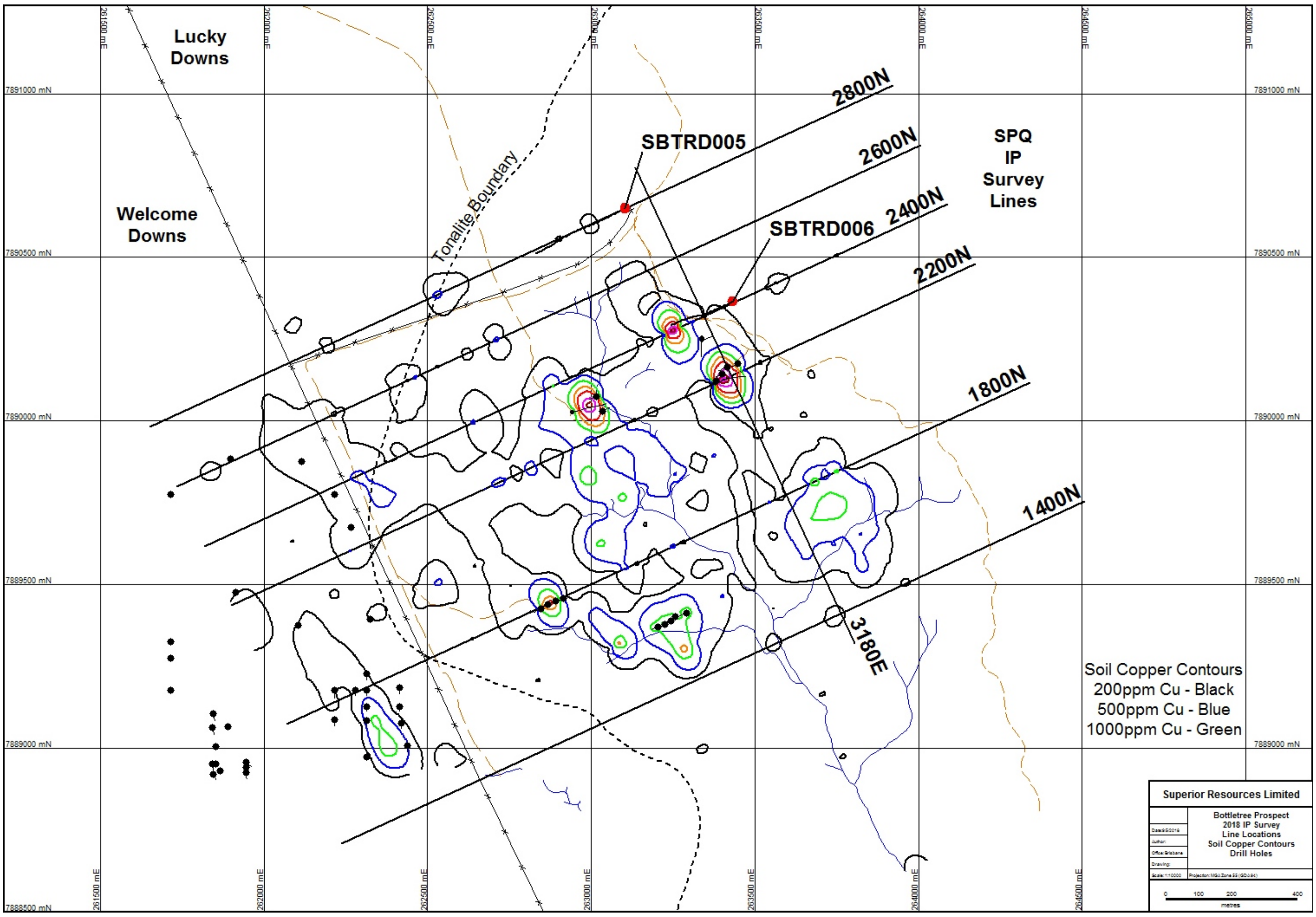


*Figure 4. Plan of the Bottletree area showing the location of drill holes SBTRD005 and SBTRD006 and section lines 2400N and 3180E shown in Figures 1, 2 and 3. Also shown are the other shallow drill hole collars, the MIMDAS survey line locations and contours of the surface copper soil geochemistry.*

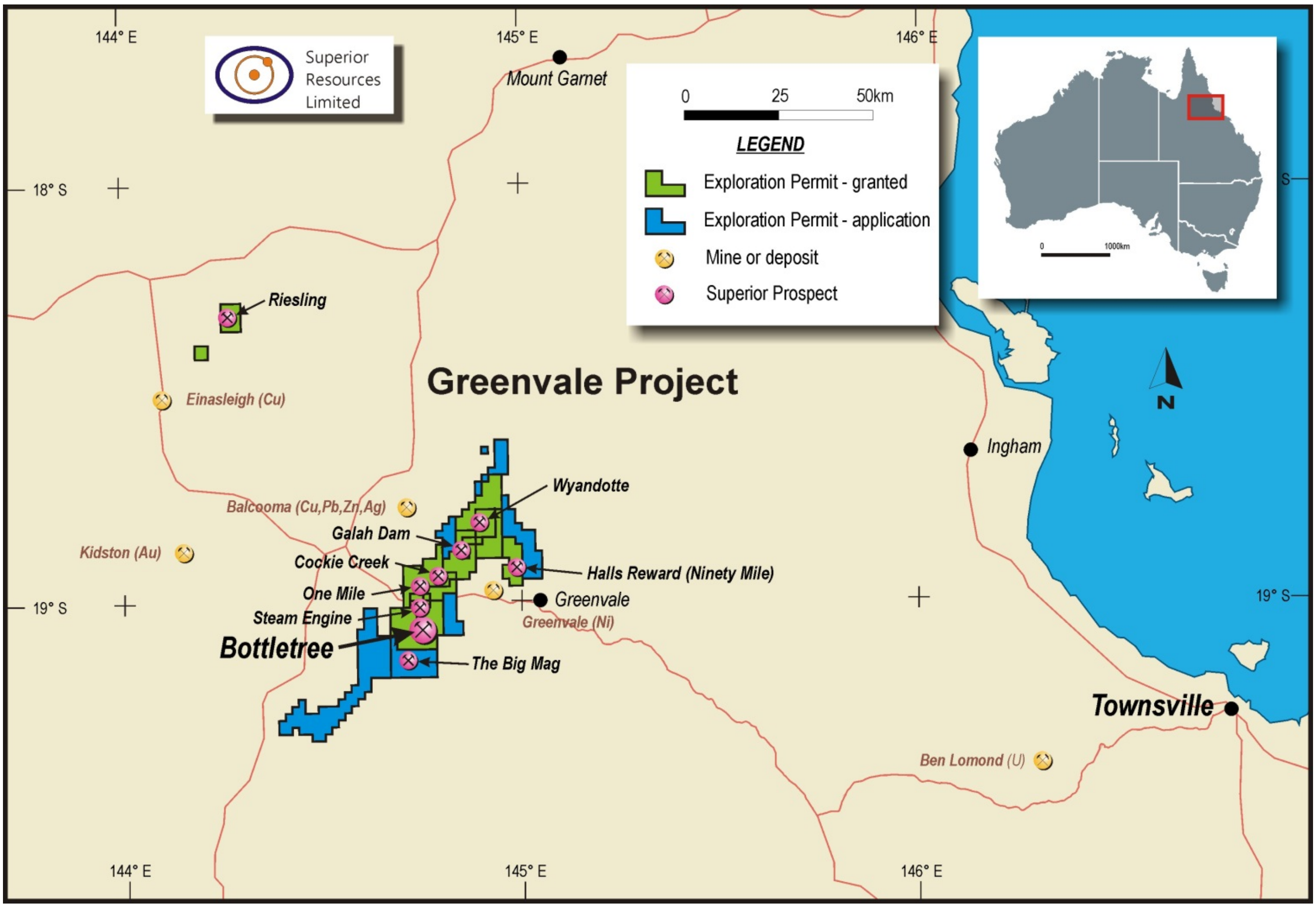


*Figure 5. Map of the area north west of Townsville showing Superior's Greenvale Project tenements and the Bottletree Prospect location.*

## For more information:

Peter Hwang
Managing Director
Tel: +61 7 3847 2887
[www.superiorresources.com.au](www.superiorresources.com.au)
[manager@superiorresources.com.au](mailto:manager@superiorresources.com.au)

Carlos Fernicola
Chairman
+61 7 3229 1799

*The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr Ken Harvey, a non-executive Director and shareholder of Superior Resources Limited, who is a Member of the Australian Institute of Geoscientists. Mr Harvey has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Harvey consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.*

*Certain statements made in this report may contain or comprise certain forward-looking statements. Although Superior Resources Limited believes that any estimates and expectations reflected in such forward-looking statements are reasonable, no assurance can be given that such expectations will prove to have been correct. Accordingly, results and estimations could differ materially from those set out in the forward-looking statements as a result of, among other factors, changes in the economic and market conditions, success of business and operating initiatives and changes in the regulatory environment. Superior undertakes no obligation to update publicly or release any revisions of any forward-looking statements to reflect events or circumstances after the date of this report or to reflect the occurrence of unanticipated events.*

# JORC Code, 2012 Edition – Table 1

***Section 1 Sampling Techniques and Data***
(Criteria in this section apply to all succeeding sections.)

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Sampling techniques*** | • *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.*<br>• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*<br>• *Aspects of the determination of mineralisation that are Material to the Public Report.*<br>• *In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.* | • Drilling from surface comprised reverse circulation (**RC**) drilling of pre-collars followed by diamond core drilling to end of hole.<br>• Samples are obtained from reverse circulation (**RC**) drilling of the pre-collars for each hole. Samples are obtained from diamond core drilling (**DD**) commencing from the bottom of the pre-collars to the end of hole for each hole.<br>• All RC samples are collected as drilled via a riffle splitter attached to the drill rig cyclone.<br>• RC samples are collected as 1m riffle split samples. All samples were passed through a cyclone and then through a splitter. Bulk 1m samples were collected from the splitter. Analytical sample size was in the order of 2.5kg to 3kg.<br>• All RC holes were drilled using a standard face sampling hammer with bit size of 133mm. The drill bit sizes used in the drilling were consistent in size and are considered appropriate to indicate the degree and extent of mineralisation.<br>• DD samples were obtained by splitting core in half using core saw.<br>• The magnetic susceptibility of all RC samples was measured in the field. The magnetic susceptibility of all core samples was measured at Terra Search Pty Ltd core storage facility in Townsville.<br>• 2m interval representative RC samples derived from compositing two samples from consecutive 1m intervals, were assayed for base metals, gold, silver and other elements at ALS laboratories in Townsville.<br>• Assaying for gold was via fire assay of a 50 gram charge.<br>• Sample preparation at ALS laboratories in Townsville for all samples is considered to be of industry standard procedure. |
| ***Drilling techniques*** | • *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).* | • Drilling from surface comprised reverse circulation (**RC**) drilling of pre-collars followed by diamond core drilling to end of hole.<br>• Drilling was performed using standard RC and DD drilling techniques.<br>• Drilling was conducted by Associated Exploration Drillers Pty Ltd using a UDR 650 multipurpose drill rig with a 1050cfm/350psi compressor and separate booster unit.<br>• All RC drilling utilised a standard face sampling hammer with bit size of 133mm.<br>• All DD drilling utilised standard NQ-2 rods. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | • All holes were surveyed using a Reflex digital instrument to obtain accurate down-hole directional data. Most of the diamond drill core was oriented to allow structural logging of the core. |
| ***Drill sample recovery*** | • *Method of recording and assessing core and chip sample recoveries and results assessed.*<br>• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*<br>• *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.* | • Sample recovery was performed and monitored by Terra Search contractor and Superior Resources' representatives.<br>• RC recoveries were excellent. RC samples were all dry.<br>• The volume of RC sample collected for assay is considered to be representative of each 2m interval.<br>• RC drill rod string delivered the sample to the rig-mounted cyclone which is sealed at the completion of each 1m interval. The riffle splitter is cleaned with compressed air at the end of each 1m interval and at the completion of each drill hole.<br>• Diamond drill core recovery was logged. Recovery overall was close to 100%.<br>• There is no apparent relationship between sample recovery and grade of mineralisation. |
| ***Logging*** | • *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*<br>• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*<br>• *The total length and percentage of the relevant intersections logged.* | • Geological logging was conducted during the drilling of each hole by a Terra Search geologist having sufficient qualification and experience for the mineralisation style expected and observed at each hole.<br>• Geological logging data was entered via a well-developed logging system designed to capture descriptive geology, coded geology and quantifiable geology. All logs were checked for consistency by the Terra Search Principal Geologist. Data captured through Excel spread sheets and Explorer 3 Relational Data Base Management System.<br>• The logging of RC chips is both qualitative and quantitative. Alteration, weathering and mineralisation data contain both qualitative and quantitative fields.<br>• All holes were logged in their entirety at 1m intervals. All logging data is digitally compiled and validated before entry into the Superior database.<br>• The level of logging detail is considered appropriate for resource drilling.<br>• Magnetic susceptibility data for each 1m sample interval was collected in the field.<br>• The entire length of all drill holes has been geologically logged.<br>• All core was logged for structure with structures being recorded in relation to a bottom line marked on the core and established using Reflex equipment. Logging included both and Alpha and Beta angles. Data from structural logging of planar features was converted to grid dips and dip directions as well as plan parameters to allow structures to be plotted on sections and allow structures to be projected to the ground surface by software. |
| ***Sub-sampling techniques*** | • *If core, whether cut or sawn and whether quarter, half or all core taken.* | • The sample collection methodology is considered appropriate for RC and diamond drilling and was conducted in accordance with best industry practice. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***and sample preparation*** | • *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.*<br>• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*<br>• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*<br>• *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*<br>• *Whether sample sizes are appropriate to the grain size of the material being sampled.* | • RC samples were collected with a riffle splitter at 1m intervals and are regarded as reliable and representative.<br>• Samples were collected as dry samples.<br>• Diamond drill core was split in half using a diamond saw with half of the sample being sent for assay and the remainder retained for reference. Core halving was done along the bottom line marked on the core for structural logging.<br>• Quality Assurance (**QA**)/Quality Control (**QC**) protocols were instigated such that they conform to mineral industry standards and are compliant with the JORC code.<br>• Terra Search's input into the (QA) process with respect to chemical analysis of mineral exploration samples includes the addition of blanks, standards and duplicates to each batch so that checks can be done after they are analysed. As part of the (QC) process, Terra Search checks the resultant assay data against known or previously determined assays to determine the quality of the analysed batch of samples. An assessment is made on the data and a report on the quality of the data is compiled.<br>• Terra Search quality control included determinations of duplicate samples every 50 samples or so to check for representative samples. There was a conscious effort on behalf of the samplers to ensure consistent weights for each sample. Comparison of assays of duplicates shows good reproducibility of results.<br>• The above techniques are considered to be of a high quality and appropriate for the nature of mineralisation anticipated. The 2-3kg sample size is appropriate for the rock being sampled. The sample sizes are considered to be appropriate to represent the style of the mineralisation, the thickness and consistency of the intersections.<br>• Samples from high-grade copper intervals with grades > 1% Cu were checked by repeat assaying with an appropriate assay method for ore grade samples. |
| ***Quality of assay data and laboratory tests*** | • *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*<br>• *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*<br>• *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.* | • All samples were submitted to ALS laboratories in Townsville for gold and multi-element analysis.<br>• Samples were crushed, pulverised to ensure a minimum of 85% pulp material passing through 75 microns, then analysed for gold by fire assay method Au-AA26 using a 50-gram sample.<br>• A sub-sample of each was also subject to multi-element analysis using aqua regia digest and ICP emission spectroscopy technique for the following elements: Ag, As, Ba, Bi, Ca, Cd, Co, Cu, Fe, Mg, Mn, Mo, Ni, P, Pb, S, Sb, Zn (ALS code ME-ICP41).<br>• The primary assay method used is designed to measure both the total gold in the sample as per classic fire assay as well as the total amount of economic metals tied up in sulphides and oxides such as Cu, Pb, Zn, Ag, As, Mo, Bi as per aqua regia digest ICP finish.<br>• Some major elements which are present in silicates, such as K, Ca, Fe, Ti, Al and Mg are |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | not liberated by aqua regia digest. In this sense, the aqua regia digest is a partial analytical technique for elements locked up in silicates.<br>• Magnetic susceptibility measurements utilising Exploranium KT10 instrument, zeroed between each measurement.<br>• Certified geochemical standards and blank samples were inserted into the assay sample sequence. Laboratory assay results for these quality control samples are within 5% of accepted values. |
| ***Verification of sampling and assaying*** | • *The verification of significant intersections by either independent or alternative company personnel.*<br>• *The use of twinned holes.*<br>• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*<br>• *Discuss any adjustment to assay data.* | • The reported significant intersections have been verified by both Terra Search and Superior staff against representative drill chips, the drill core and the drill logs.<br>• No holes were twinned.<br>• No adjustments to assay data were undertaken.<br>• All drill hole logging and sampling data continue to be uploaded and validated by Terra Search and Superior staff. Validation is checked by comparing assay results with logged mineralogy e.g. percent of metallic sulphides minerals in comparison to metal assays.<br>• Data is collected by qualified geologists and experienced field assistants and entered into excel spreadsheets.<br>• Data is imported into Microsoft Access tables from the Excel spreadsheets with validation checks set on different fields. Data is then checked thoroughly by the Operations Geologist for errors. Accuracy of drilling data is then validated when imported into MapInfo.<br>• Data is exported from the database into additional formats to allow section plotting of the results.<br>• Data is stored on a server in both Terrasearch's and Superior's head offices, with regular backups and archival copies of the database made.<br>• No adjustments are made to the data. Data is imported into the database in its original raw format. |
| ***Location of data points*** | • *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*<br>• *Specification of the grid system used.*<br>• *Quality and adequacy of topographic control.* | • Drill hole collars have been recorded in the field using hand held GPS with three metre or better accuracy. Collars will also be picked up by a Trimble Differential GPS (DGPS) to provide location accuracy in the order of 0.15m X-Y and 0.3m in the Z direction.<br>• Down hole surveys were conducted on all holes using a Reflex GYRO with surveys taken both inside a stainless RC rod above the hammer and inside the open diamond drill holes.<br>• The data is reduced to a local RL control consistent with the RLs used during the MIMDAS IP survey.<br>• The area is located within UTM Zone 55, GDA94 datum. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Data spacing and distribution*** | • *Data spacing for reporting of Exploration Results.*<br>• *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.*<br>• *Whether sample compositing has been applied.* | • Two holes were drilled along local grid lines at 400m spacing and testing specific targets.<br>• Further drilling is necessary to establish a Mineral Resource. |
| ***Orientation of data in relation to geological structure*** | • *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*<br>• *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.* | • The majority of holes have been designed to drill normal to interpreted mineralisation trends. However, there has been insufficient drilling and geological interpretation to determine if there is a bias to sampling as a result of drilling oblique to or down dip on mineralised structures.<br>• No orientation sample bias has been identified at this stage. |
| ***Sample security*** | • *The measures taken to ensure sample security.* | • Chain of custody was managed by Terra Search Pty Ltd. Samples were transferred by them to ALS. |
| ***Audits or reviews*** | • *The results of any audits or reviews of sampling techniques and data.* | • No audits or reviews of the sampling techniques and data have been undertaken at this time. |

## *Section 2 Reporting of Exploration Results*

(Criteria listed in the preceding section also apply to this section.)

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Mineral tenement and land tenure status*** | • *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.*<br>• *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.* | • The areas reported on lie within Exploration Permit for Minerals 26165 which was granted on 30 January 2017 and held 100% by Superior. Superior holds much of the surrounding area under granted exploration permits.<br>• Superior has agreements or other appropriate arrangements in place with landholders and native title parties with respect to work in the area.<br>• No regulatory impediments affect the relevant tenements or the ability of Superior to operate on the tenements. |
| ***Exploration done by other parties*** | • *Acknowledgment and appraisal of exploration by other parties.* | • All of the historical work reported or used in this report has been completed and reported in accordance with the current regulatory regime.<br>• Previous work on the prospect has been completed by Pancontinental Mining.<br>• Historic drilling at the prospect has returned drill intercepts in the order of 52m @ |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | 0.35% Cu, 64m @ 0.32% Cu and 45m @ 0.27% Cu. |
| ***Geology*** | • *Deposit type, geological setting and style of mineralisation.* | • The Bottletree Prospect is hosted in Lower Palaeozoic deformed mafic meta-volcanic lavas and volcaniclastics.<br>• Mineralisation style is disseminated sulphide of probable magmatic origin.<br>• Although there is mineralisation of volcanic hosted and porphyry style in the region, the actual nature and geometry of the mineralisation at the Bottletree Prospect is still open to interpretation. More geological, geochemical and drill data is required to fully understand the mineralisation setting. |
| ***Drill hole Information*** | • *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*<br>○ *easting and northing of the drill hole collar*<br>○ *elevation or RL (Reduced Level) of the drill hole collar*<br>○ *dip and azimuth of the hole*<br>○ *down hole length and interception depth*<br>○ *hole length.*<br>• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.* | • A drill hole collar table is included<br>• Significant copper intersections are included in the main body of the announcement. These tables include information relevant to an understanding of the results reported. |
| ***Data aggregation methods*** | • *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.*<br>• *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.*<br>• *The assumptions used for any reporting of metal equivalent values should be clearly stated.* | • In the intervals quoted broad intervals are done so using a cut-off grade of 0.1% Cu. These broader intervals may include some narrow intervals of less than 0.1% copper. Higher-grade copper intersections are quoted on a cut-off of 0.5% copper. Intervals used for sampling of core were designed to separate areas of high-grade copper from areas from low-grade copper intervals to maximise the value of the information captured. This approach compares with a regular sample interval which does not collect this extra detail. In compositing of the mineralised intervals by standard weighted averages the two approaches are equivalent.<br>• No metal equivalent values are reported. |
| ***Relationship between mineralisation widths and intercept*** | • *These relationships are particularly important in the reporting of Exploration Results.*<br>• *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*<br>• *If it is not known and only the down hole lengths are reported,* | • Downhole length, true width not known until further drilling provides more information on the nature of the mineralised body.<br>• Detailed drill sections are not available at this stage. Summary sections are included.<br>• Only significant intercepts reported. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***lengths*** | *there should be a clear statement to this effect (e.g. 'down hole length, true width not known').* | |
| ***Diagrams*** | • *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.* | • Detailed drill sections not available at this stage. Summary sections are included to allow the significance of the mineralisation being reported to be understood. |
| ***Balanced reporting*** | • *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.* | • Only significant mineralised intervals reported. |
| ***Other substantive exploration data*** | • *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.* | • Images from an advanced 3D model of a MIMDAS IP survey are included on the sections to allow an appreciation of the relationship of the mineralised intervals with the 3D modelling results. |
| ***Further work*** | • *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).*<br>• *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.* | • Further detailed drilling is required for the targets to establish continuity, thickness and grade and extensions to mineralisation.<br>• Proposed further work is outlined in the report and includes proposed further drilling.<br>• Insufficient information currently exists to evaluate the geometry of mineralisation. |