# ASX Announcement (ASX: HMX)

**19th November 2014**

## OVERLANDER NORTH, SCALPER AND KALMAN DRILLING RESULTS

## NEW COPPER-GOLD DISCOVERY AT SCALPER PROSPECT

- **New copper-cobalt intersections returned from Overlander North including:**
  - **89 metres at 1.1% Cu and 427 ppm Co from 173 metres at a 0.1% Cu cut-off including:**
    - 19 metres at 1.9% Cu and 751 ppm Co from 197 metres and
    - 11 metres at 2.4% Cu and 770 ppm Co from 222 metres
    - 4 metres at 2.3% Cu and 449 ppm Co from 238 metres, and
    - 4 metres at 3.0% Cu and 1162 ppm Co from 253 metres in OVRC031
  - **131 metres at 0.59% Cu and 289 ppm Co from 190 metres at a 0.1% Cu cut-off including:**
    - 3 metres at 1.1% Cu and 427 ppm Co from 213 metres
    - 27 metres at 1.4% Cu and 403 ppm Co and 0.14g/t Au from 238 metres in OVRC030

- **New copper-gold discovery at the Scalper Prospect with first hole. Thick Iron Oxide Copper-Gold (IOCG) alteration and mineralisation present. Intersection of:**
  - **58 metres at 0.58% Cu and 0.13g/t Au at a 0.1% Cu cut-off including:**
    - 23 metres at 1.1% Cu and 0.27 g/t Au from 77 metres, including
    - 12 metres at 1.9% Cu and 0.45 g/t Au from 87 metres in SCRC001

- **Drilling at Kalman confirms near surface high grade molybdenum and copper zones:**
  - 17 metres at 0.54% Mo and 12g/t Re and 8g/t Ag (3.7% CuEq), from 74 metres and
  - 24 metres at 0.46% Mo, 0.24% Cu and 11 g/t Re (3.4% CuEq), from 139 metres in K135
  - 20 metres at 0.18% Mo and 3.3 g/t Re (1.3% CuEq) from 70 metres in K137
  - 16 metres at 0.14% Mo and 4g/t Re (1.2% CuEq) from 45 metres in K138
  - 12 metres at 1.2% Cu and 0.5g/t Au (1.5% CuEq) from 0 metres in K139

- **Kalman and Overlander Mineral Resource updates to commence in December quarter**

- **Completed detailed gravity and magnetic surveys at the Overlander, Andy's Hill and Dronfield IOCG targets with geophysical 3D modelling currently in progress.**

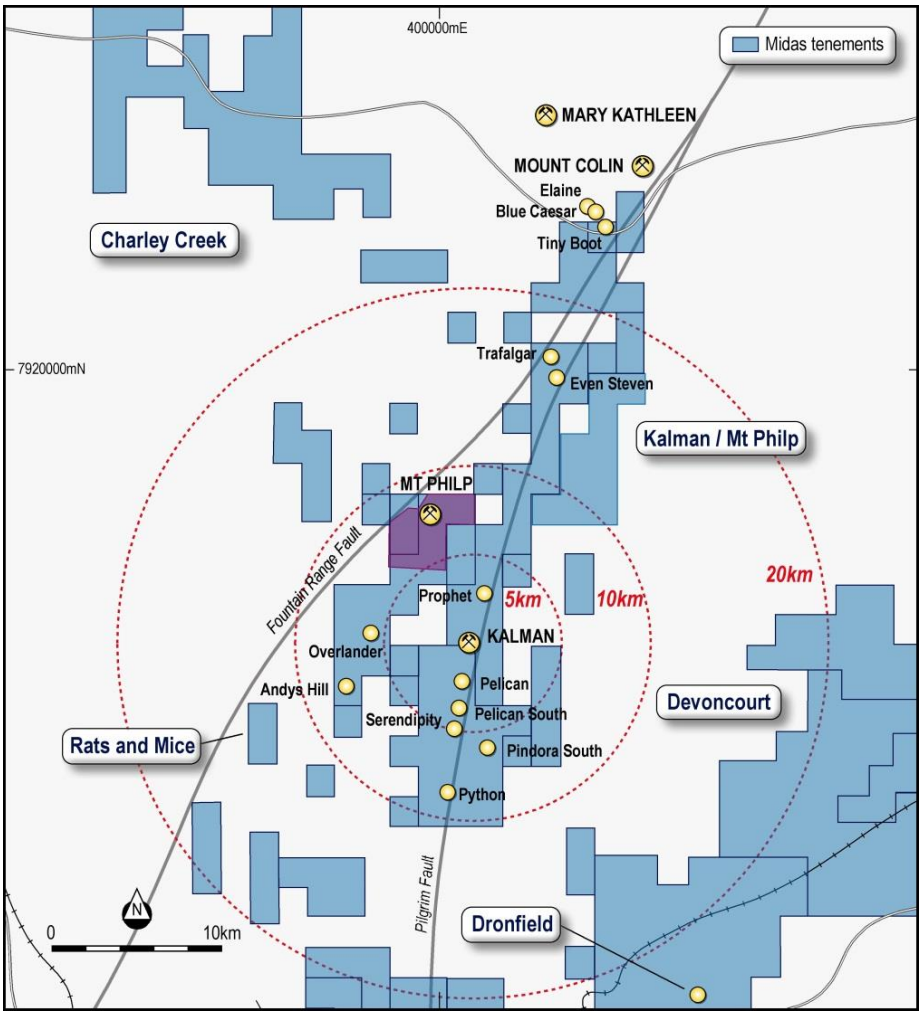
Hammer Metals Limited (**ASX: HMX**) ("Hammer" or "the Company") is pleased to report a new copper discovery at the Scalper Prospect from its recently completed Reverse Circulation (RC) drilling program consisting of 9 drill holes for 1661 metres at the Company's 100% owned Overlander North, Kalman and Scalper prospects located near the mining centre of Mount Isa in North West Queensland.

The RC drilling program was designed to follow up the outstanding results from the previous program at Overlander North and Kalman (reported in ASX releases dated 15th and 16th September 2014), and to provide an initial test of the Scalper Prospect, a strong magnetic target located 6km along strike to the south of the Andy's Hill IOCG Prospect.

Hammer's Executive Director, Alex Hewlett commented, These results further demonstrate the extensive mineralisation and prospectivity of the Overlander, Andy's Hill and Scalper IOCG corridor. In addition the recent drilling at Kalman has the potential to increase the size of the near-surface resources in the Kalman resource model which will improve the economics of any open pit mining scenario."

"We plan to move forward quickly with resource updates for Overlander North and Kalman and a follow up drilling program is planned for Scalper. We consider the results of this initial hole at Scalper to be highly encouraging and for Scalper to have potential for outlining an open pittable copper-gold resource."

The continued success of our drilling program underpins our ongoing exploration strategy of finding and proving up high-quality targets within our large 2000km$^2$ tenement package.




**Project Locations**

**DRILLING SUMMARY**

**Overlander North Prospect**

The 100% owned Overlander Project is targeted for both shear-hosted copper mineralisation at Overlander North and Overlander South as well as IOCG mineralisation associated with the adjacent Overlander West magnetic anomaly and the Overlander East rhyolite breccia (**117 metres at 0.35% Cu from 43 metres depth in OVRC024)**. (Refer to previous ASX announcements dated 3rd June 2014, 14th July 2014 and 16th September 2014.)

Hammer recently announced a combined Mineral Resource Estimate for the Overlander North and Overlander South copper deposits of **1,157,000 tonnes at 1.2% Cu** at a 0.7% Cu cut-off grade in the Inferred category. (Refer to ASX release dated 24th July 2014.)

In this program two drill holes (OVRC030 and OVRC031) were drilled to test along strike to the north and south of OVRC029 (**75 metres at 1.33% Cu from 176 metres**) and below the boundary of the current resource model.

Both drill holes returned encouraging widths and grades of copper-cobalt-gold mineralisation supporting the results in OVRC029 and the general increase in width and continuity of the mineralized zone with depth. Significant results include:

- **131 metres at 0.59% Cu and 289g/t Co from 190 metres at a 0.1% Cu cut-off including:**
  - **27 metres at 1.4% Cu and 403 ppm Co from 238 metres in OVRC030**
- **89 metres at 1.1% Cu and 423ppm Co from 173 metres at a 0.1% Cu cut-off including:**
  - **19 metres at 1.9% Cu and 751 ppm Co from 197metres**
  - **11 metres at 2.4% cu and 770 ppm Co from 222 metres in OVRC031**

The true width of the above intersections is estimated to be approximately 25 - 30 metres.

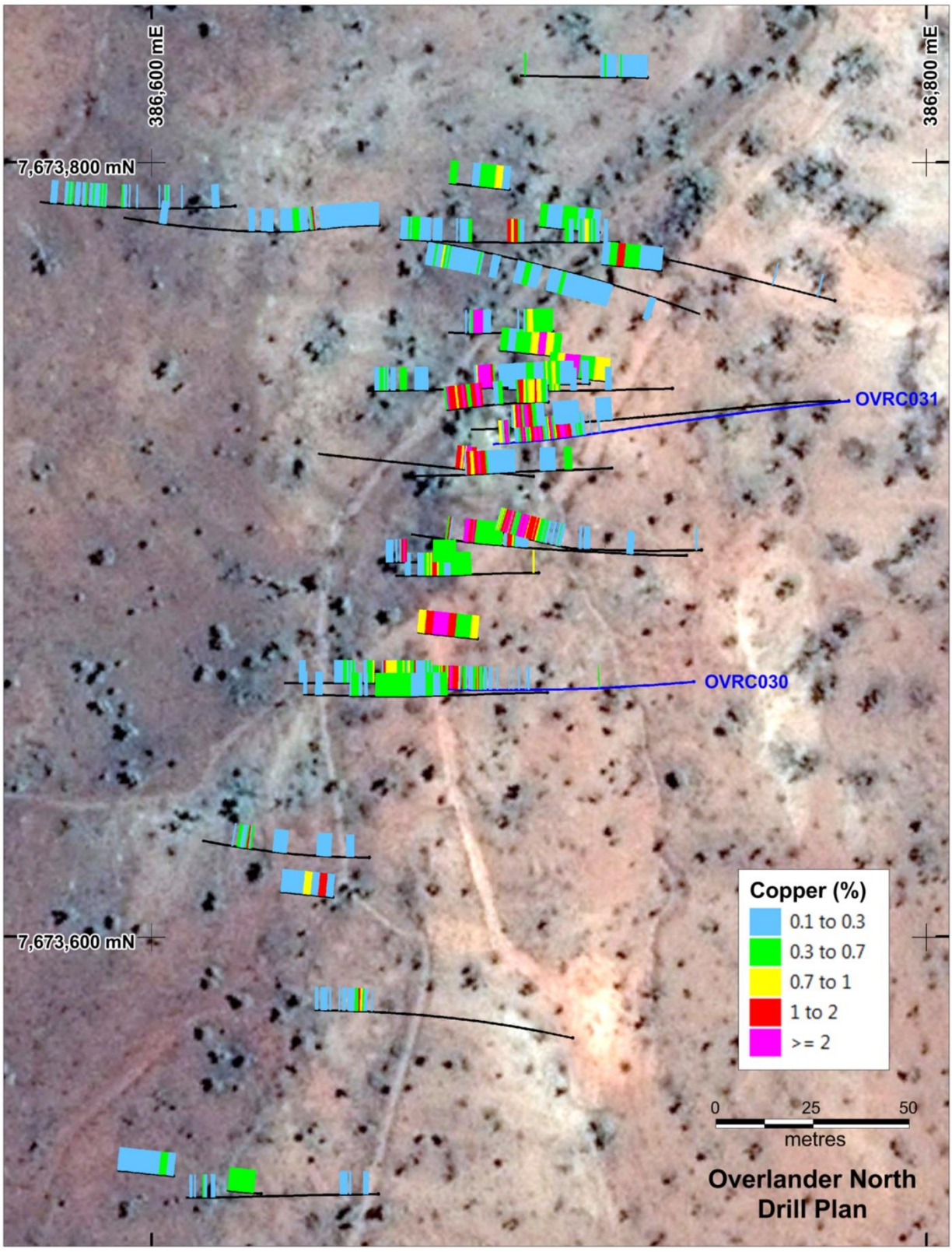
Potential association between this mineralisation and the immediately adjacent Overlander West IOCG target has yet to be tested with drilling which is planned for early 2015.

**Overlander North Hole Locations**

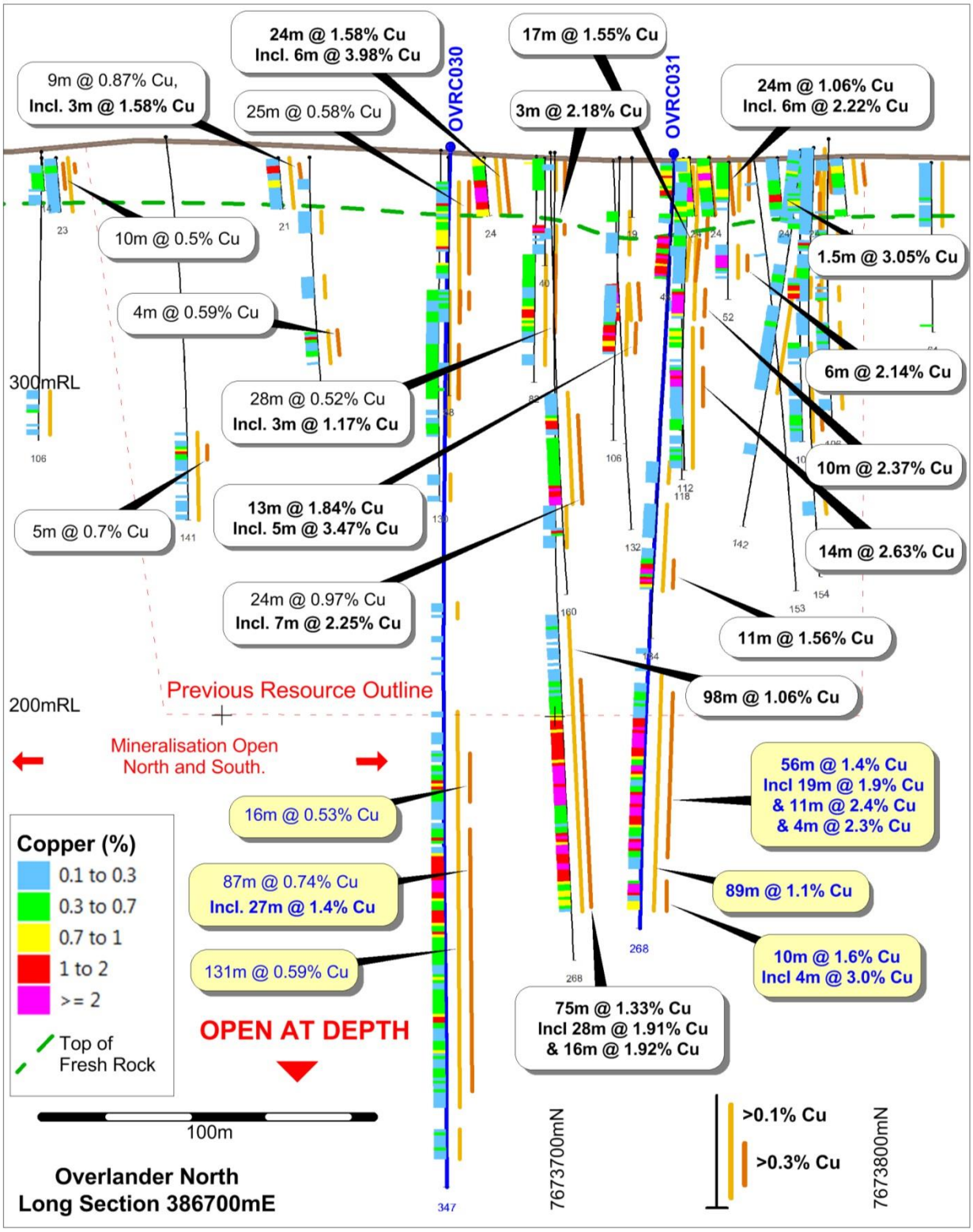
| Prospect | HoleID | East (MGA94z54) | North (MGA94z54) | RL | Dip | Azimuth (MGA94z54) | Total Depth (m) |
|---|---|---|---|---|---|---|---|
| Overlander | OVRC030 | 386740 | 7673666 | 384 | 0 | 0 | 347 |
| | OVRC031 | 386780 | 7673738.5 | 382 | -66 | 0.0 | 268 |

**Overlander North Significant Intercepts**

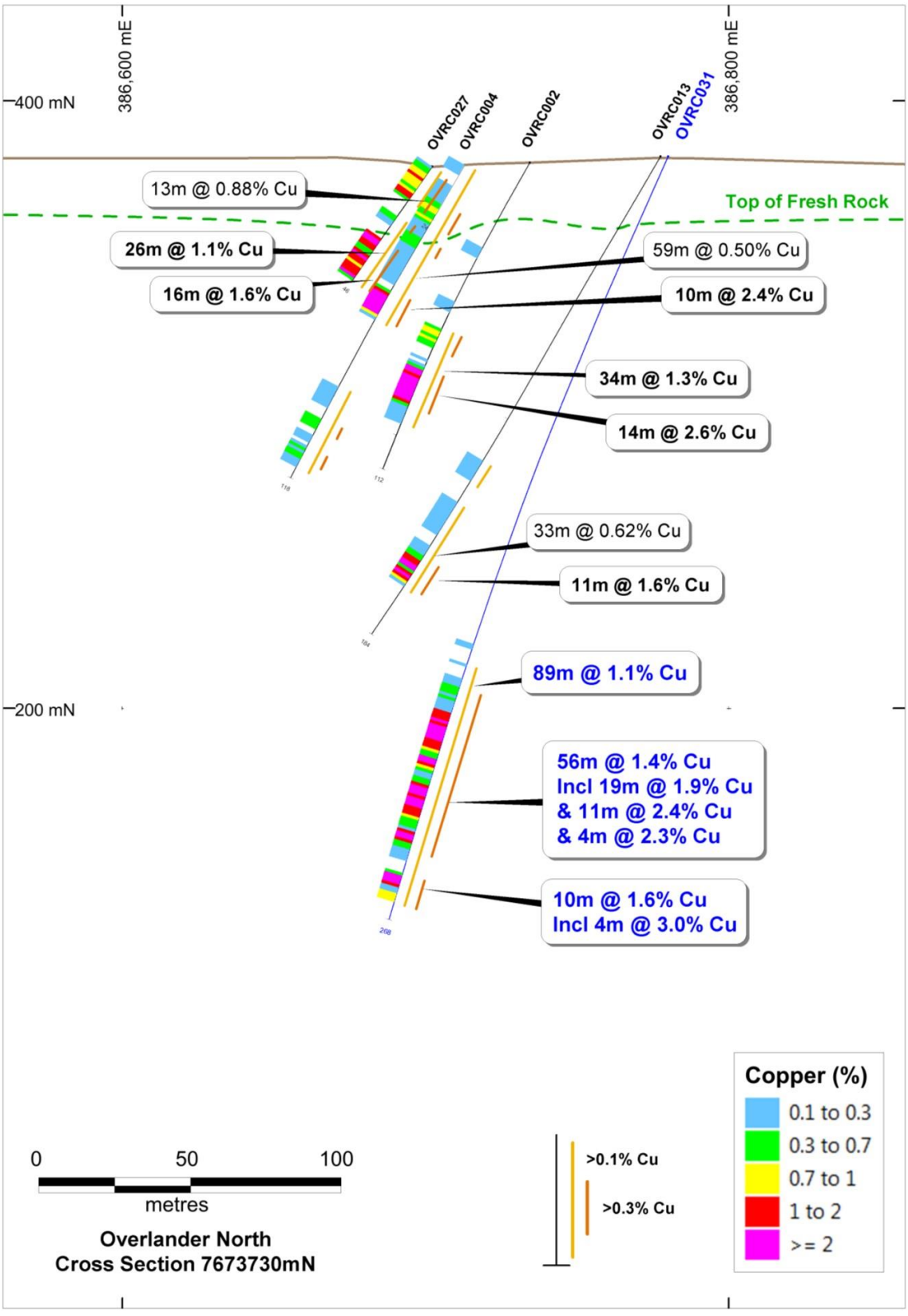
| HoleID | | Interval (m) | From (m) | Cu (%) | Au (g/t) | Co (g/t) | Cu (%) Cut-off |
|---|---|---|---|---|---|---|---|
| OVRC030 | | 131 | 190 | 0.59 | 0.04 | 289 | 0.1 |
| | Incl | 3 | 213 | **1.1** | 0.02 | 427 | 1 |
| | & | 1 | 232 | **1.6** | 0.03 | 568 | 1 |
| | & | 27 | 238 | **1.4** | 0.14 | 403 | 1 |
| | & | 2 | 291 | **1.4** | 0.01 | 652 | 1 |
| OVRC031 | | 89 | 173 | **1.1** | 0.04 | 423 | 0.1 |
| | Incl | 19 | 197 | **1.9** | 0.09 | 751 | 1 |
| | & | 11 | 222 | **2.4** | 0.09 | 770 | 1 |
| | & | 4 | 238 | **2.3** | 0.09 | 449 | 1 |
| | & | 4 | 253 | **3.0** | 0.07 | 1162 | 1 |



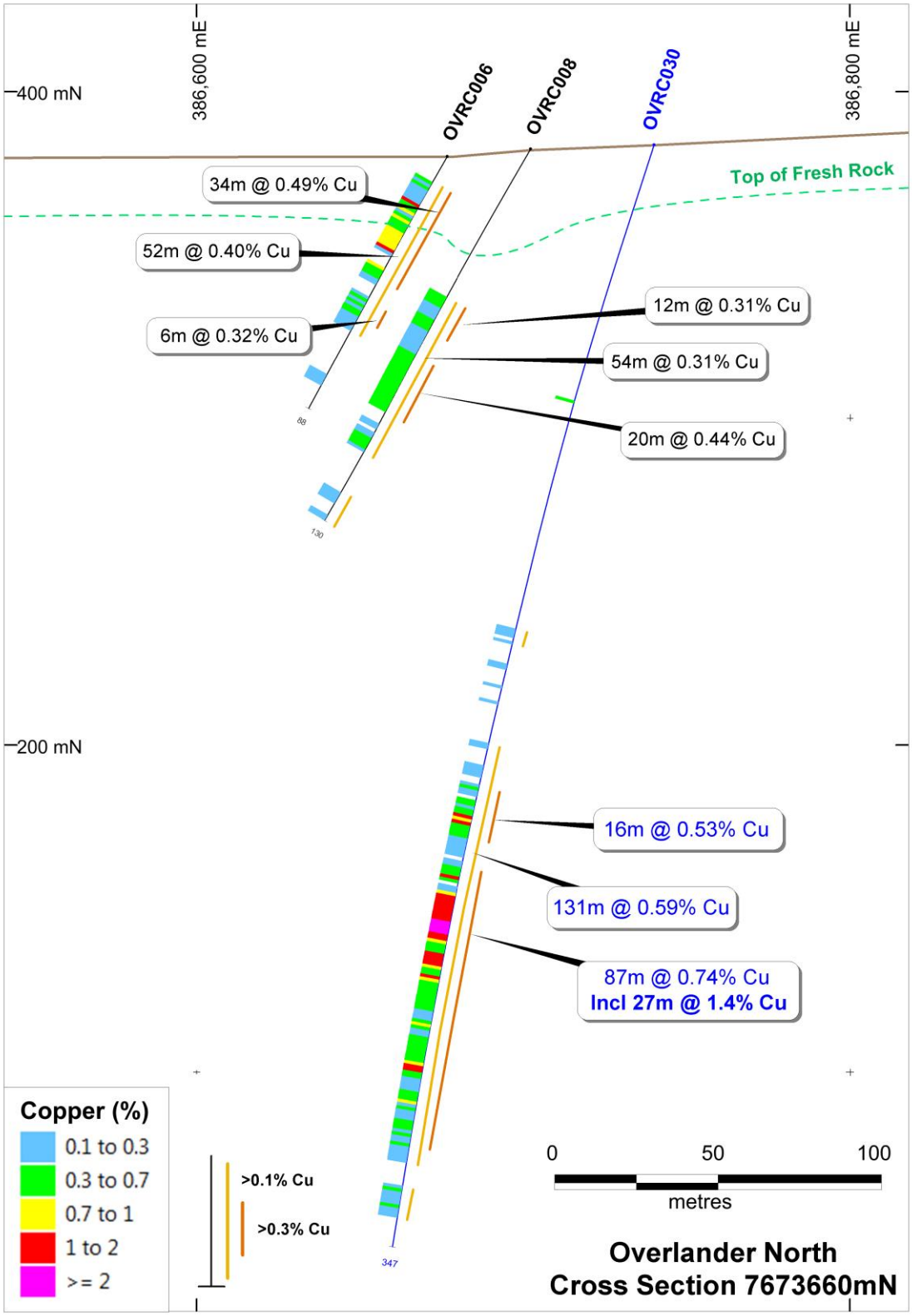

**Overlander North Drill Hole Location**




**Overlander North Long Section**




**Overlander North Drill Section**




**Overlander North Drill Section**

**Scalper Prospect**

One RC hole for 136 metres (SCRC001) was drilled beneath a copper-gold anomalous ironstone within a strong magnetic anomaly and coincident "red-rock" alteration zone.

Scalper is located in the same stratigraphic position as the Andy's Hill and Overlander IOCG targets 6-10km to the north and immediately east of the Overlander Granite.

The drill hole intercepted strongly altered calcareous sediments with abundant magnetite and a broad zone of copper anomalism containing a central high grade interval of copper-gold-silver mineralisation. The hole did not fully penetrate the alteration zone and was still mineralised when terminated.

Results from HSRC001 include:

- **23 metres at 1.1% Cu and 0.27g/t Au from 77 metres including:**
  - **12 metres of 1.9% Cu and 0.45g/t Au from 87 metres**

The intersection also contained anomalous levels of the light rare earth element lanthanum (up to 1210 ppm La over a 1 metre interval). Lanthanum is considered a key pathfinder element for IOCG mineralisation and is also present at Andy's Hill.

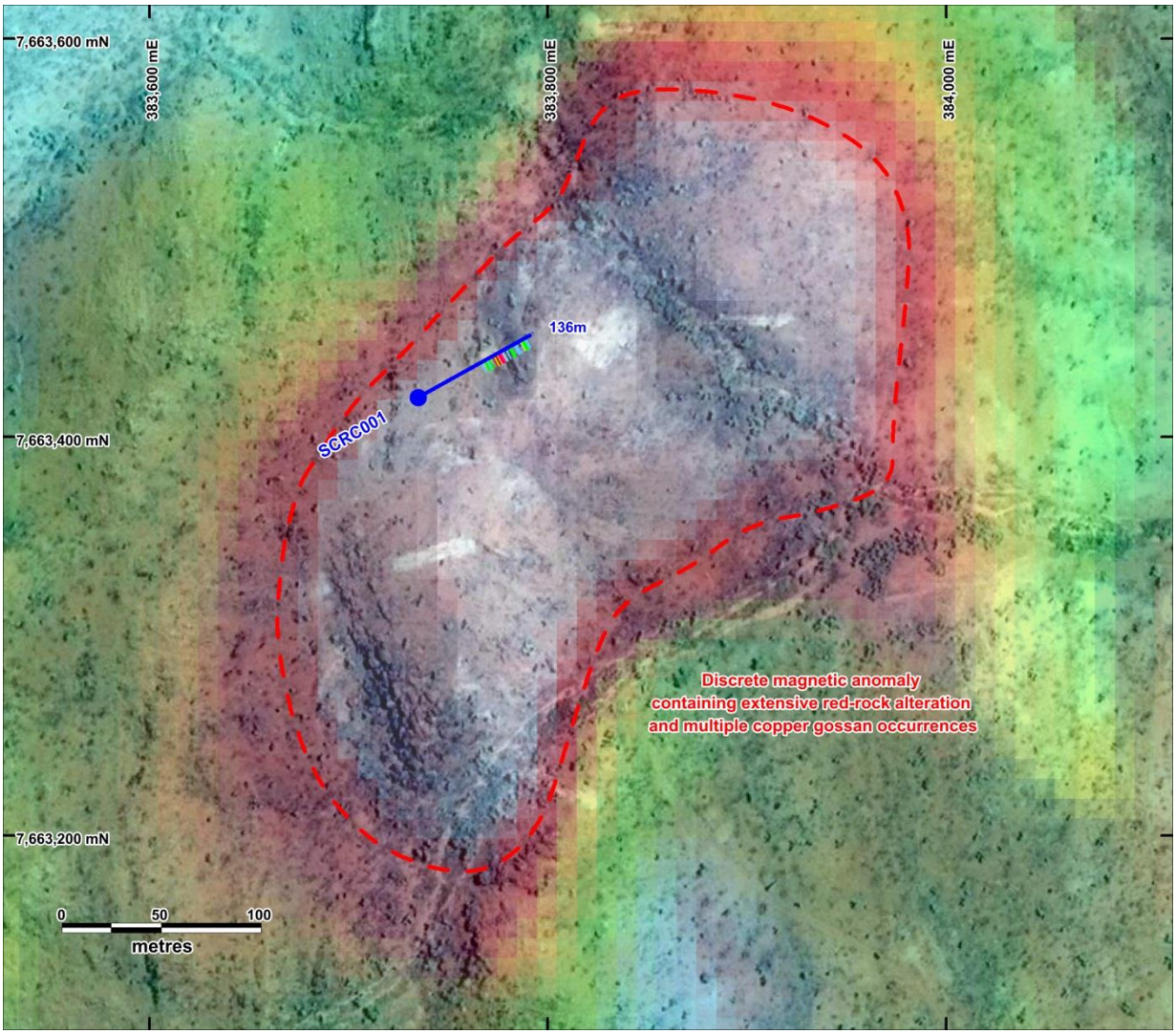
The results of this initial hole are considered highly encoraging for an open pittable copper-gold resource and a follow-up drilling program is planned.

**Scalper Hole Location**

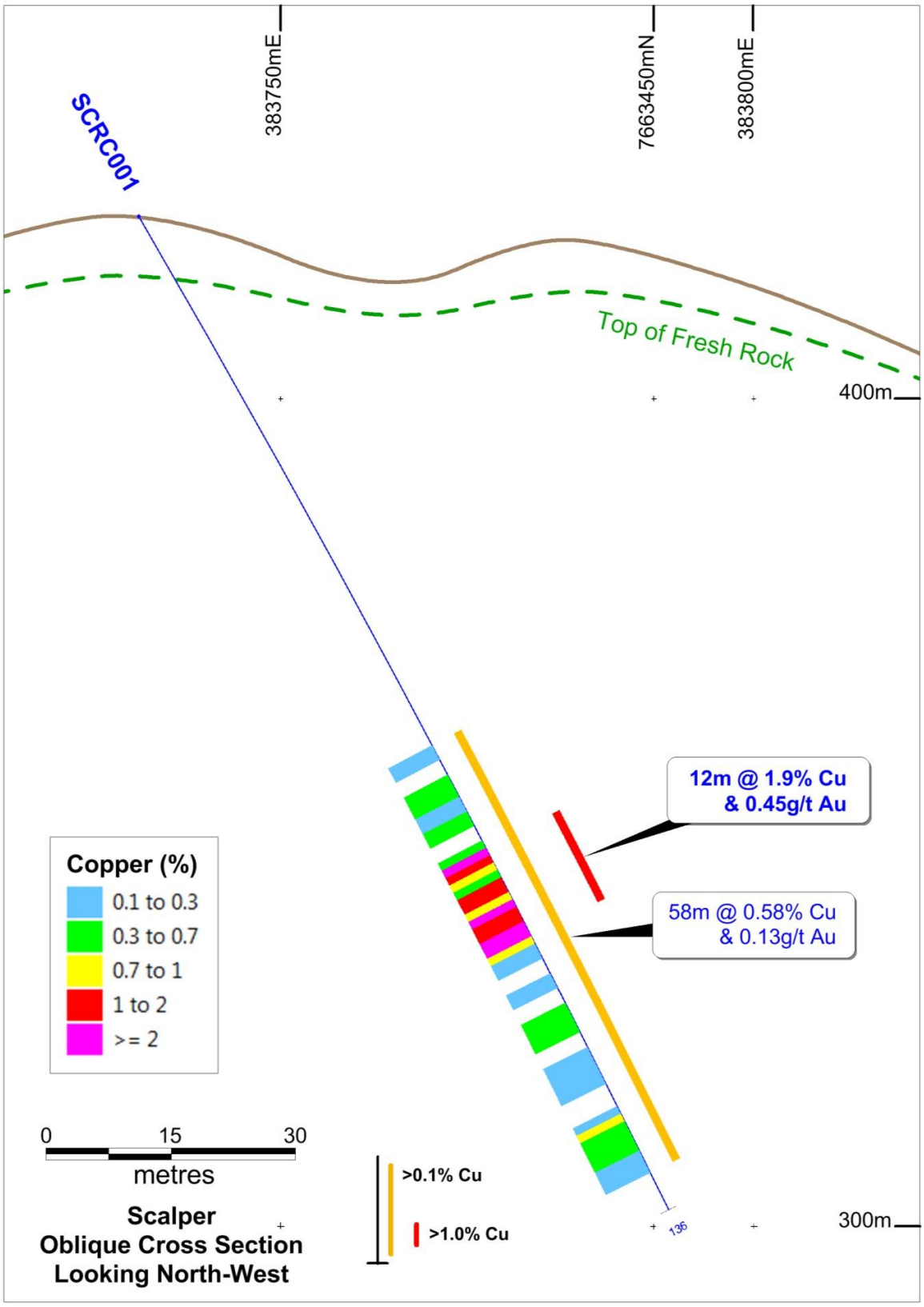
| Prospect | HoleID | East (MGA94z54) | North (MGA94z54) | RL | Dip | Azimuth (MGA94z54) | Total Depth (m) |
|---|---|---|---|---|---|---|---|
| Scalper | SCRC001 | 383735 | 7663420 | 422 | 0 | 0 | 136 |

**Scalper Significant Intercepts**

| HoleID | | Interval (m) | From (m) | Cu (%) | Au (g/t) | Co (g/t) | Cu (%) Cut-off |
|---|---|---|---|---|---|---|---|
| SCRC001 | | 58 | 73 | 0.58 | 0.13 | 211 | 0.1 |
| | Incl | 23 | 77 | **1.1** | 0.27 | 352 | 0.3 |
| | Incl | 12 | 87 | **1.9** | 0.45 | 577 | 1 |
| | & | 4 | 108 | 0.45 | 0.08 | 247 | 0.3 |
| | & | 5 | 123 | 0.48 | 0.10 | 199 | 0.3 |




**Scalper Drill Hole Location**




**Scalper Prospect Drilling**

**Kalman Deposit**

The Kalman copper-gold-molybdenum-rhenium deposit is located 60 kilometres southeast of Mount Isa and is 100% owned by Hammer Metals Limited.

Six RC holes for 904 metres were drilled at Kalman (K134 to K139). The holes were designed to follow up the high grade molybdenum and copper intercepts from K132 (refer to ASX release dated 15th September 2014) located in a poorly tested section of the upper part of the main ore shoot at Kalman.

The intersections which are up-dip of the higher grade central ore shoot will expand the zone as currently modelled closer to surface with scope to be extended further up-dip and laterally.

The Kalman Mineral Resource Estimate was updated in March 2014 in accordance with the JORC Code (2012 Edition). The Resource comprises a combined 30 million tonnes at 1.3% copper equivalent (CuEq) at 0.54% Cu, 0.28% Au, 0.08% Mo and 2.2 g/t Re in the Inferred category. (Refer to the ASX Release dated 19th March 2014 for full details of the Resource Estimate.)

**Significant results include:**

- **17 metres at 0.54% Mo and 12g/t Re and 7.8g/t Ag from 74 metres and**
- **24 metres at 0.46% Mo, 0.24% Cu and 11g/t Re from 141 metres in K135**
- **20 metres at 0.18% Mo and 3.3 g/t Re from 70 metres in K137**
- **16 metres at 0.14% Mo and 3.9g/t Re from 45 metres in K-138**
- **12 metres at 1.2% Cu and 0.50g/t Au from 0 metres in K-139**

*Kalman is a polymetallic deposit and the Kalman March 2012 Mineral Resource Estimate was reported with a CuEq estimated grade and the estimated grades for the individual metals which made up the CuEq calculation. Hammer does not consider the inputs have changed materially so for consistency the CuEq results reported from K132 used the same metal prices and algorithm as used for the 2012 Mineral Resource Estimate of CuEq. Supporting details for the CuEq calculation are shown below.

**Kalman Drillhole Locations**

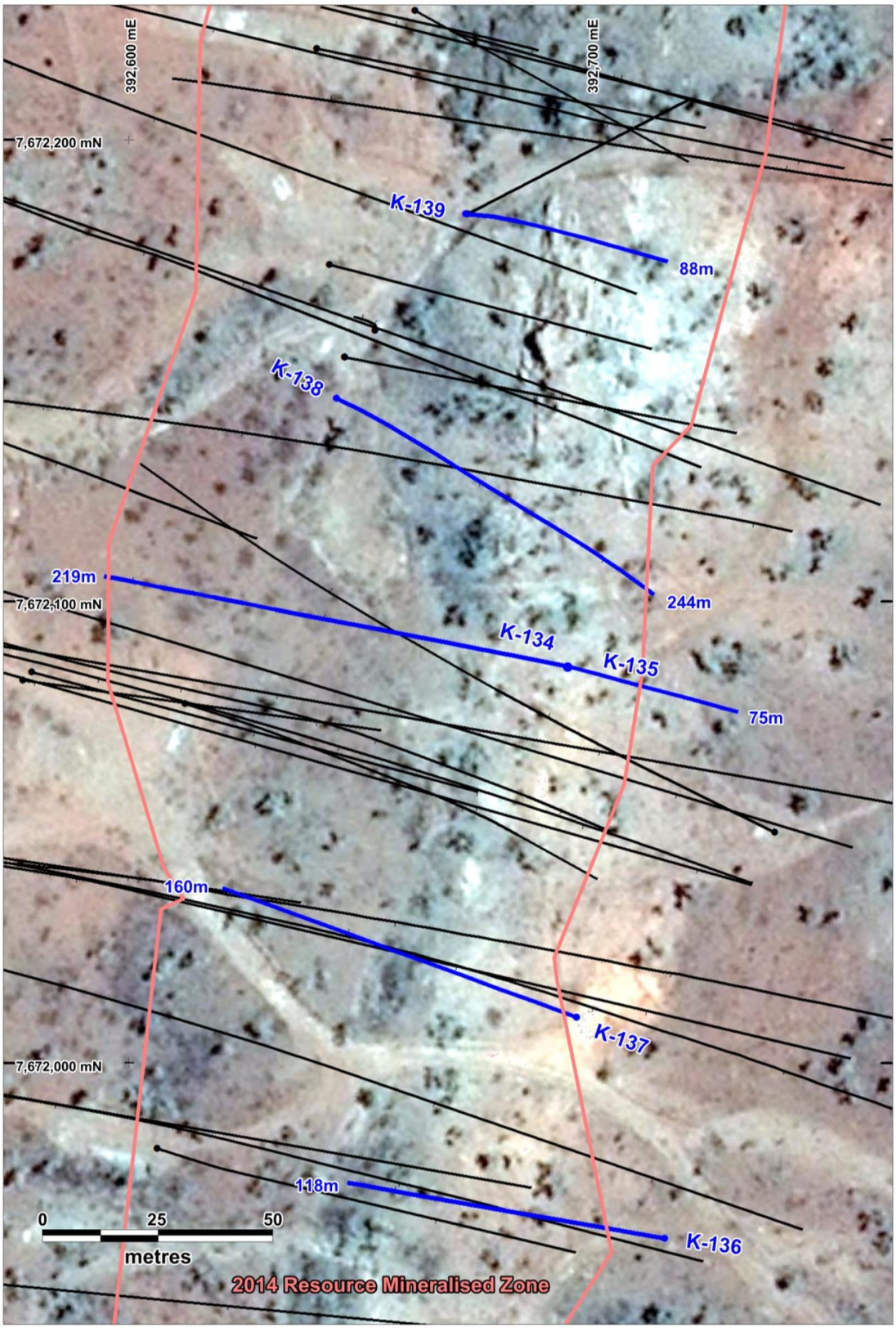
| Prospect | HoleID | East (MGA94z54) | North (MGA94z54) | RL | Dip | Azimuth (MGA94z54) | Total Depth (m) |
|---|---|---|---|---|---|---|---|
| Kalman | K-134 | 392700 | 7672090 | 398 | -52 | 280 | 200 |
| | K-135 | 392692 | 7672091 | 400 | -55 | 280 | 102 |
| | K-136 | 392710 | 7671961 | 390 | -68 | 119.8 | 10 |
| | K-137 | 392695 | 7672013 | 393 | -73 | 121.8 | 160 |
| | K-138 | 392644 | 7672145 | 391 | -60 | 95 | 244 |
| | K-139 | 392674 | 7672182 | 388 | -80 | 273 | 88 |

**Significant Copper Intercepts**

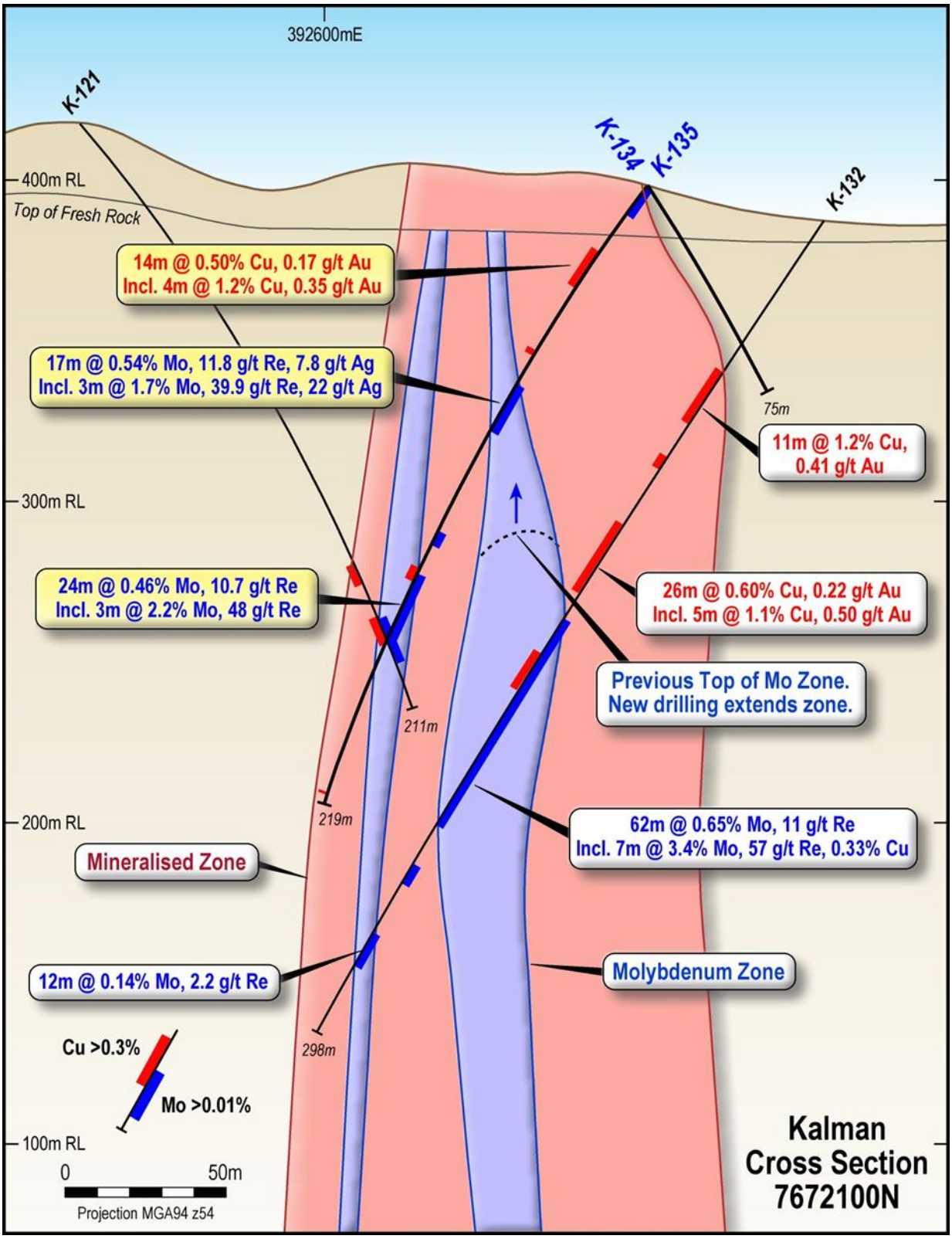
| HoleID | | Interval (m) | From (m) | Cu (%) | Au (g/t) | Ag (g/t) | Re (g/t) | CuEq (%) | Cu (%) Cut-off |
|---|---|---|---|---|---|---|---|---|---|
| K-135 | | 4 | 25 | **1.2** | 0.35 | 0.34 | | **1.4** | 0.3 |
| | | 1 | 38 | **1.6** | 0.40 | 9.30 | | **1.9** | 1 |
| | | 5 | 139 | 0.52 | 0.27 | 0.40 | **1.4** | **1.2** | 0.3 |
| | Incl | 1 | 140 | **1.3** | 0.47 | 0.25 | | **1.6** | 1 |
| | | 2 | 163 | **1.7** | 0.57 | **1.8** | **1.1** | **2.4** | 0.3 |
| K-137 | | **10** | 40 | 0.63 | 0.26 | 0.47 | | 0.80 | 0.3 |
| | Incl | 2 | 40 | **1.7** | 0.73 | 0.75 | | **2.2** | 1 |
| K-138 | | 7 | 38 | 0.86 | 0.52 | 0.74 | | **1.2** | 0.3 |
| | Incl | 2 | 42 | **1.8** | 1.3 | 0.68 | | **2.6** | 1 |
| | | 2 | 51 | 0.42 | 0.05 | **1.5** | **1.6** | 0.93 | 0.3 |
| | | **22** | 92 | 0.57 | 0.30 | 0.57 | | 0.77 | 0.3 |
| | Incl | 1 | 97 | **1.2** | 0.44 | **1.2** | | **1.5** | 1 |
| | & | 1 | 102 | **1.1** | 0.41 | 0.60 | | **1.3** | 1 |
| | & | 1 | 112 | **1.4** | 0.59 | **1.0** | | **1.8** | 1 |
| K-139 | | **12** | 0 | **1.2** | 0.50 | 0.71 | | **1.5** | 0.3 |
| | Incl | 6 | 3 | **1.7** | 0.47 | 0.68 | | **2.0** | 1 |
| | & | 1 | 11 | **1.0** | 0.27 | **1.5** | | **1.3** | 1 |

**Significant Molybdenum Intercepts**

| HoleID | | Interval (m) | From (m) | Ag (g/t) | Mo (%) | Re (g/t) | CuEq (%) | Mo (%) Cut-off |
|---|---|---|---|---|---|---|---|---|
| K-135 | | 3 | 5 | 6.0 | 0.20 | 0.29 | **1.2** | 0.1 |
| | | **17** | 74 | 7.8 | 0.54 | **12** | **3.7** | 0.01 |
| | Incl | **14** | 76 | 9.2 | 0.64 | **14** | **4.4** | 0.1 |
| | & | 3 | 80 | **22** | **1.7** | **40** | **12** | 1 |
| | | **24** | 141 | 0.62 | 0.46 | **11** | **3.4** | 0.01 |
| | Incl | **18** | 141 | 0.58 | 0.54 | **12** | **3.8** | 0.1 |
| | & | 3 | 149 | 0.72 | **2.2** | **48** | **15** | 1 |
| K-136 | Incl | **17** | 88 | 1.3 | 0.11 | 2.7 | 0.80 | 0.01 |
| | | 7 | 96 | 2.5 | 0.24 | 5.8 | **1.6** | 0.1 |
| K-137 | Incl | **20** | 70 | 0.94 | 0.18 | 3.3 | **1.3** | 0.01 |
| | | **12** | 70 | 1.3 | 0.27 | 4.8 | **2.0** | 0.1 |
| K-138 | Incl | **16** | 45 | 4.1 | 0.14 | 3.9 | **1.2** | 0.01 |
| | | 9 | 46 | 6.4 | 0.23 | 6.3 | **1.9** | 0.1 |
| K-139 | | 1 | 15 | 1.7 | 0.20 | 3.1 | **1.6** | 0.1 |
| | | 2 | 22 | **30** | 0.22 | 4.8 | **1.9** | 0.1 |




**Kalman Drill Hole Location**




**Kalman Drill Section**

**Gravity and Magnetic Modelling**

Hammer has recently completed detailed ground gravity surveys over the Dronfield, Andy's Hill and Overlander North IOCG target areas. The gravity was completed in order to outline any denser and potentially mineralised iron-rich bodies within the known alteration zones. Hammer's geophysical consultants are currently modelling the gravity data in conjunction with Hammer's high-resolution magnetic data. Results will be released shortly.

**- ENDS -**

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## Notes on Copper Equivalence Calculation

Copper equivalent (CuEq) grades were calculated using estimated block grades for Cu, Au, Ag, Mo and Re. The CuEq calculation is based on commodity prices and metallurgical recovery assumptions as detailed in this release. Prices agreed to by Hammer were a reflection of the market as at 14/02/2014 and forward looking forecasts provided by consensus analysis, these prices have not varied significantly. Metal prices provided are:

- Cu: US$7,165/t
- Au: US$1,324.80/oz
- Ag: US$22.40/oz
- Mo: US$16.10/lb

The forward looking price for Rhenium was estimated using available historical and current prices.

- Re: US$5,329/kg

The CuEq equation is CuEq = Cu + 0.594464Au + 0.010051Ag + 4.953866Mo + 0.074375Re and was applied to the respective elements estimated within the resource block model.

**Assumed Metallurgical Recoveries**

Based on the testing completed and the current understanding of the material characteristics it has been assumed that the Kalman material can be processed using a "typical" concentrator process flowsheet. The mass balance and stage metallurgical recovery of the four major elements were based on the metallurgical test results from the molybdenum zone sample and benchmarks. The final overall recovery (Table 3) was established from the mass balance and benchmarked against other operations and projects.

**Table 3: Assumed Metallurgical Recoveries**

| Process Stage | Molybdenum Recovery (%) | Rhenium Recovery (%) | Copper Recovery (%) | Gold Recovery (%) | Silver[(1)] Recovery (%) |
|---|---|---|---|---|---|
| Bulk Rougher | 95 | 86 | 95 | 82 | 82 |
| Overall | 86 | 77 | 86 | 74 | 74 |

*(1) No data available for Silver recoveries so they have been assumed similar to Gold Recoveries*

It is the company's opinion that the metals used in the metal equivalent equation have reasonable potential for recovery and sale based on metallurgical recoveries in flotation test work undertaken to date. There are a number of well-established processing routes for copper-molybdenum deposits and the sale of resulting copper and molybdenum concentrates.

Molybdenum concentrates with rhenium require roasting to capture the rhenium from the process off-gas. There are several offshore facilities that process molybdenum concentrates of which Molymet is the world's largest molybdenum processer and the largest producer of rhenium.

Because of the relatively small market for rhenium there is limited public information available for the payment of credits for rhenium. Preliminary enquiries by the company provide the company with sufficient confidence to believe that a credit for the rhenium content of the molybdenum concentrate can be obtained.

## Competent Person's Statements:

### Historic Exploration Results

The information in this report as it relates to exploration results and geology first reported prior to 1 December 2013 was reviewed by Mr John Downing, who is a Member of the Australian Institute of Geoscientists and a consultant to the Company. Mr Downing 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 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Downing consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

This information was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.

### Exploration Results – Overlander, Kalman and Scalper

The information in this report as it relates to exploration results and geology was compiled by Mr John Downing, who is a Member of the Australian Institute of Geoscientists and a consultant to the Company. Mr Downing 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 Downing consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.

### Overlander North and South Mineral Resource Estimate

Where the Company refers to the Overlander North and South Mineral Resource Estimate in this report (referencing the release made to the ASX on 24 July 2014), it confirms that it is not aware of any new information or data that materially affects the information included in that announcement and all material assumptions and technical parameters underpinning the resource estimate with that announcement continue to apply and have not materially changed.

### Kalman Resource Estimate

Where the Company refers to the Kalman Project and the revised mineral resource estimate in this report (referencing the release made to the ASX on March 19th 2014), it confirms that it is not aware of any new information or data that materially affects the information included in that announcement and all material assumptions and technical parameters underpinning the resource estimate with that announcement continue to apply and have not materially changed.

# JORC Code, 2012 Edition

# Table 1 report – Kalman, Overlander and Scalper Drilling

## Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections in this information release.)

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Sampling techniques* | • *Nature and quality of sampling (eg 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 (eg '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 (eg submarine nodules) may warrant disclosure of detailed information.* | • The sampling reported herein relates to one metre assay results from drilling conducted during October and early November of 2014. The sampling was done using a reverse circulation (RC) drilling rig to obtain individually riffle split 1m samples weighing approximately 3kg.<br>• Zones of 1 metre sampling were identified from Niton (portable XRF) analysis at the drill site. The accuracy of the Niton Analyses was monitored with regular standard analysis at a rate of 8 analyses per 100 analyses. Zones of elevated Niton response were submitted for laboratory analysis.<br>• The selected one metre samples submitted for assay underwent a fine crush with 1kg riffled off for pulverising to minus 80 mesh.<br>• Samples from holes at Kalman were subject to 4 acid digest followed by ICP-AES on a 33 element suite (including Copper, Cobalt, Arsenic, Silver and Uranium). ICP-MS was then conducted for Molybdenum and Rhenium only.<br>• Samples from holes at Overlander and Scalper were subject to Aqua Regia digest followed by ICP-AES on a 33 element suite (including Copper, Cobalt, Arsenic, Silver and Uranium).<br>• For all areas, Gold was analysed via Fire Assay with AAS finish on a 50 gram charge |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Drilling techniques* | • *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).* | • Reverse circulation utilising a face sampling bit with a diameter of between 5.25 and 5.5 inches. |
| *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.* | • Recovery of samples was visually estimated and recorded in the logs. Average recovery of the samples was estimated to be in the range of 80-90% in the area of interest. One area of lower recovery occurred in the top 2 metres prior to the setting of casing.<br>• Holes were drilled dry using a booster and auxiliary compressor. Dry samples were recorded through all of the mineralised intervals.<br>• No sample recovery bias was observed through mineralised zones. |
| *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.* | • All drill chips were geologically logged in detail by Hammer Metals geologists recording lithology, mineralogy, alteration, mineralisation, weathering, colour and any other features of the sample to a level of detail to support appropriate studies.<br>• Small washed samples from each one metre interval were collected and stored in a chip tray<br>• All holes were logged in full. |
| *Sub-sampling techniques and sample preparation* | • *If core, whether cut or sawn and whether quarter, half or all core taken.*<br>• *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.* | • No diamond core drilling was done. All samples were submitted to ALS Mount Isa for analysis.<br>• Sample size is considered appropriate |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *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 (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.* | • The selected one metre samples submitted for assay underwent a fine crush with 1kg riffled off for pulverising to minus 80 mesh.<br>• Samples from Kalman holes were subject to 4 acid digest followed by a ICP-AES, 33 element suite (including Copper, Cobalt, Arsenic, Silver and Uranium). ICP-MS was then conducted for Molybdenum and Rhenium only.<br>• Samples from holes at Overlander and Scalper were subject to Aqua Regia digest followed by ICP-AES on a 33 element suite (including Copper, Cobalt, Arsenic, Silver and Uranium).<br>• Gold was analysed via Fire Assay with an AAS finish on a 50 gram charge.<br>• With respect to Quality Assurance, suitable base metal Standards were inserted at a rate of 4 per 100 samples. |
| *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.* | • All results were checked by alternative company personnel.<br>• The release relates to 9 holes. These holes were not planned to twin existing holes.<br>• All field logging is done into laptops on site and later entered into the company database.<br>• Assay files are received electronically from the laboratory. |
| *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.* | • The hole collars are currently recorded to GPS accuracy (+-3m) and the elevation is derived from either LIDAR data (in the case of Kalman holes), a DGPS DEM (in the case of Overlander holes) or a default RL (based on a GPS Elevation) in the case of the Scalper hole. The LIDAR data and DGPS DEM both have a vertical accuracy of less than 0.5m. The GPS elevation data has an accuracy of approximately 5m.<br>• The Datum used is MGA 94 Zone 54.<br>• Drill hole positions will be re-surveyed |

| Criteria | JORC Code explanation | Commentary |
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| | | to DGPS accuracy in due course. |
| *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.* | • At Overlander and Kalman, drill hole spacing is sufficient to establish geological and grade continuity.<br>• At Scalper only one hole has been drilled therefore strike continuity cannot be established. However downhole intercepts can be correlated with mineralised surface features.<br>• Sample compositing was not conducted. However the quoted intercepts are calculated by compositing one metre assay intervals. The compositing details are documented below. |
| *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.* | • In all cases, drill holes were designed to intersect mineralisation in order to reduce bias wherever possible. |
| *Sample security* | • *The measures taken to ensure sample security.* | • Pre-numbered bags are used and transported by company personnel to the ALS Laboratory in Mount Isa. ALS transports samples to other laboratories (within the ALS group) as required. |
| *Audits or reviews* | • *The results of any audits or reviews of sampling techniques and data.* | • No audits or reviews have been undertaken in relation to the drilling reported herein. However the sampling techniques utilised were audited as part of a previous ore resource estimation. |

## 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* | • Holes K-134, K-135, K-136 and K-137 are located within EPM13870, which is held 100% by Mt Dockerell Mining Pty Ltd (a 100% owned subsidiary of Hammer Metals Limited).<br>• Holes K-138, K-139, OVRC030, |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *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.* | OVRC031 and HSRC001 are located within EPM14232, which is held 100% by Mt Dockerell Mining Pty Ltd (a 100% owned subsidiary of Hammer Metals Limited).<br>• Drill hole HSCRC001 is located within EPM25486, which is held 100% by Hammer Metals Limited.<br>• A 2% NSR Royalty is applicable on EPM13870. No Royalties are applicable on EPM14232 and EPM25486.<br>• All holes are within the Kalkadoon claim area<br>• The above-mentioned tenements are in good standing with the Qld DME |
| *Exploration done by other parties* | • *Acknowledgment and appraisal of exploration by other parties.* | • Exploration at Kalman has been conducted since 2005 primarily by Kings Minerals NL (now Cerro Resources limited), Syndicated Metals Limited and Hammer Metals Limited.<br>• Prior to this period work was also undertaken by Texins (1970's), PIMEX (1980's) and MIM (early 1990's).<br>• At Overlander previous exploration in the 1970's by CEC (including one diamond drill hole) and in the 2005-2006 period by Kings Minerals Limited. Hammer Metals has conducted Reverse Circulation drilling and has released a resource estimate to the market in early 2014.<br>• At Scalper, previous exploration was conducted by Australian Selection Pty Ltd in the 1960's. Since this time little or no work has been conducted. |
| *Geology* | • *Deposit type, geological setting and style of mineralisation.* | • At Kalman, Intrusion related hydrothermal Cu-Mo-Re-Au mineralisation hosted by red rock altered Calc-Silicate rocks in the regional scale Pilgrim Fault Zone.<br>• At Overlander and Scalper, Both Shear-Hosted and IOCG style copper-(gold-cobalt) mineralisation hosted by Calc-Silicate rocks close to the Wonga Granite intrusion. |
| *Drill hole Information* | • *A summary of all information material to the understanding of the exploration results including a tabulation of the following information* | • See attached table |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *for all Material drill holes:*<br>○ *easting and northing of the drill hole collar*<br>○ *elevation or RL (Reduced Level – elevation above sea level in metres) 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.* | |
| *Data aggregation methods* | • *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg 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.* | • Kalman: Intercepts are calculated for both Copper and Molybdenum-Rhenium. Copper Intercepts are reported for both 0.3 and 1% Copper cut-offs. Molybdenum Intercepts are reported at 0.01, 0.1 and 1% Molybdenum cut-offs.<br>• Kalman: A Copper Equivalent grade is calculated for the intercepts. The calculation is shown under Notes to Copper Equivalence Calculation above.<br>• Overlander: Copper Intercepts are calculated at 0.1 and 1% Copper cut-offs.<br>• Scalper: Copper Intercepts are calculated at 0.1, 0.3 and 1% Copper cut-offs. |
| *Relationship between mineralisation widths and intercept lengths* | • *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, there should be a clear statement to this effect (eg 'down hole length, true width not known').* | • All holes are oriented approximately perpendicular to the interpreted strike of mineralisation. Estimates of true width for the drilling are listed below.<br>• Kalman K-135 and K-139 have true width 72% of intersected width (70% and 73%). K-136, K-137, K-138 true width 53% of intersected width (50%, 54% and 55%).<br>• Overlander: True width 27% of intersected width. Average from 2 holes (21% and 32%).<br>• Scalper: True width 45% of intersected width. |
| *Diagrams* | • *Appropriate maps and sections (with scales) and tabulations of intercepts* | • See attached figures |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *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.* | |
| *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.* | • All holes which were drilled during the program are reported. Holes not containing significant results are reported as such. |
| *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.* | • Other drilling is reported on plans and cross sections accompanying the release. |
| *Further work* | • *The nature and scale of planned further work (eg 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.* | • Specific Gravity analysis using Gas Pycnometry will be conducted on samples from this program in due course. |