## **ASX Announcement** (ASX: HMX)



17th March 2015

# 3D-IP modeling for Overlander Central and Andy's Hill defines large chargeable and low resistivity targets.

Hammer Metals Limited (**ASX: HMX**) ("Hammer" or "the Company") wishes to update shareholders on the Company's activities on its Mount Isa projects.

- A program of geological mapping and 3D-IP (Induced Polarisation) geophysical surveying and analysis commenced at Overlander and Andy's Hill in mid-February and was completed in mid-April.
   The survey was the first of its type in the Project area.
- Inversion modelling of the IP lines completed to date over the Overlander North, Overlander Central and Andy's Hill Iron Oxide Copper-Gold (IOCG) targets has enhanced the understanding and prospectivity of gravity and magnetic targets generated late last year (Refer to ASX releases dated 26/11/2014 and 18/3/2015).
- At Andy's Hill the IP chargeability iso-surfaces outline an anomaly, which is in excess of 500 metres
  in length (at the 20mv/v level). The initial testing of this anomaly will commence as part of the
  current drilling program. The IP chargeability anomalies tend to be located on the margins of the
  more intense gravity and magnetic zones.
- At Overlander Central, IP and resistivity iso-surfaces indicates that the Rhyolitic Crackle Breccia has
  a chargeability and low resistivity signature that will also be targeted by drilling.
- Geological mapping completed at Overlander and Andy's Hill identified extensive magnetite
  alteration and secondary copper mineralisation at surface above the overlapping IP, gravity and
  magnetic targets;

The current drilling program is designed to provide an initial test of targets at Overlander North, Overlander Central Andy's Hill as well as the existing IP and geochemical anomalies at Hammer Time located 2km to the west of Kalman.

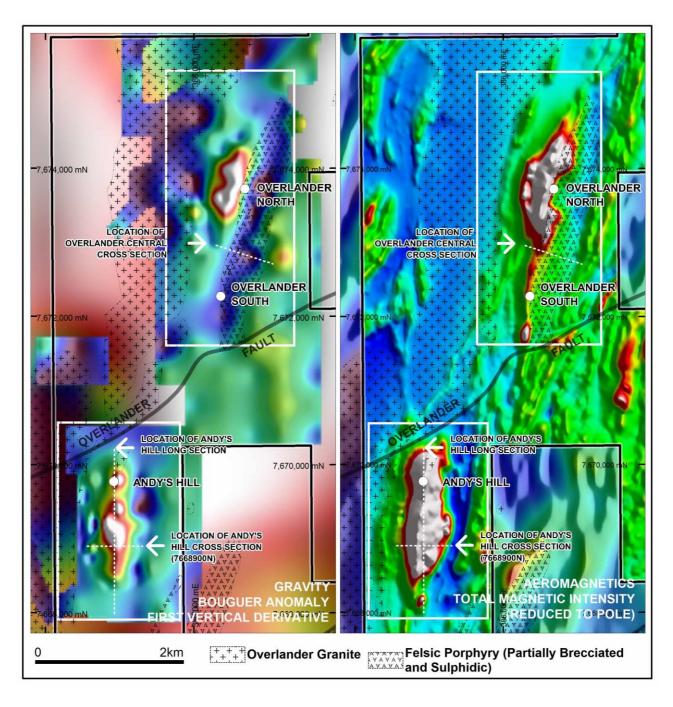
The following figures show several of the IP anomalies present within the surveyed area and their relationship to the magnetic and gravity models and copper-in-soil geochemistry.

For further information, please contact:

Alex Hewlett
Executive Director
Hammer Metals

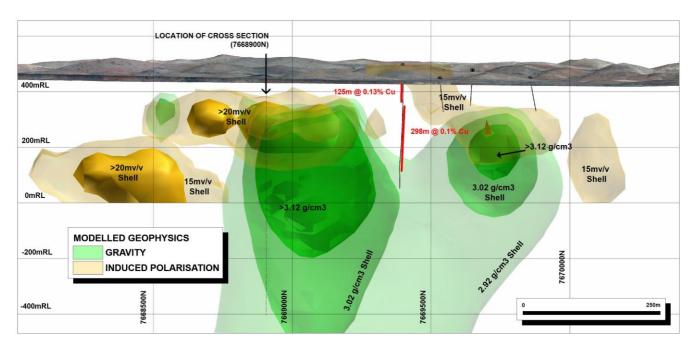
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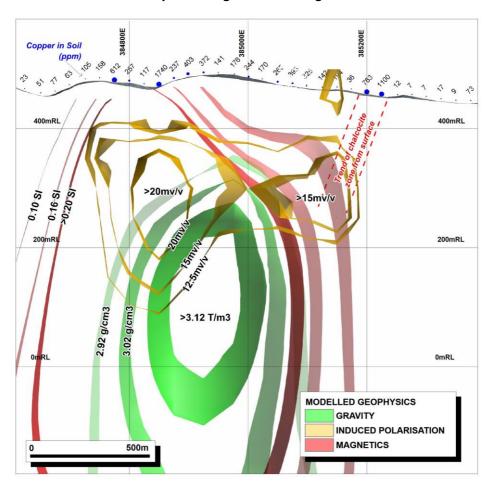


Andy's Hill and Overlander IOCG Targets with the IP survey extent (shown as a white outline)



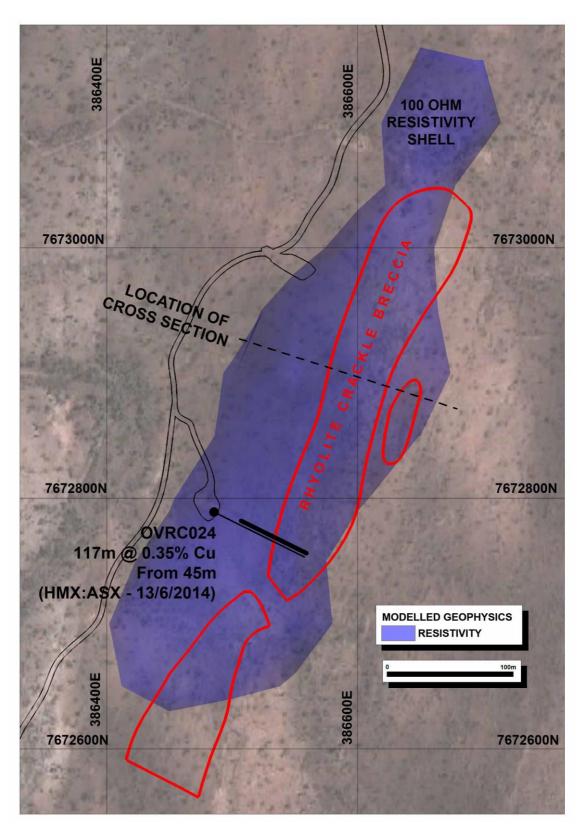


Andy's Hill Long Section looking West



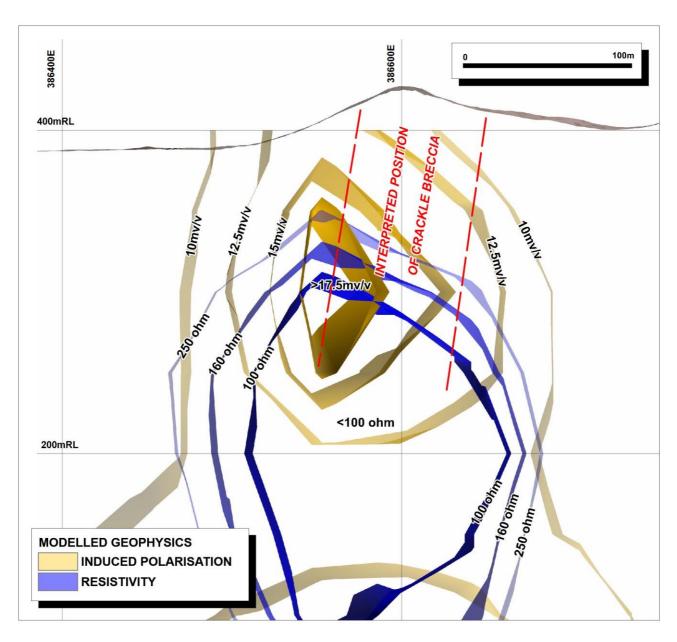
Andy's Hill Cross Section 7668900N looking North





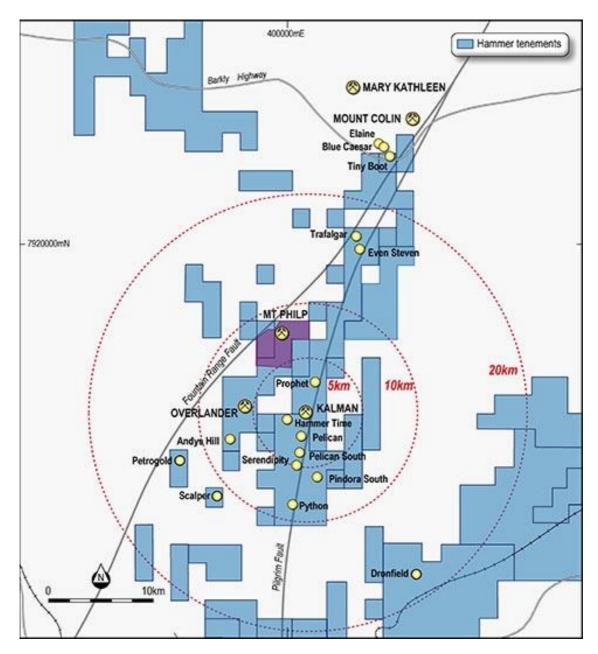
Overlander Central Plan showing the extent of the 100ohm resistivity iso-surface in relation to the mapped extent of the Rhyolite crackle breccia





**Overlander Central Oblique Section looking North-Northeast** 





**Project Location Map** 

### **Competent Person's Statement**

#### **Exploration Results - Overlander**

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



# JORC Code, 2012 Edition

# Table 1 report – Overlander and Andy's Hill Induced Polarisation Survey and Modelling

### **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	<ul> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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.</li> </ul>	<ul> <li>The primary subject of this release is to report on interim results from a finalized Induced Polarisation survey which was conducted over the Overlander and Andy's Hill Prospects. This survey builds on previously modelled Gravity and Magnetic data which was completed in late 2014. Aspects of the Induced Polarisation survey (relating to Overlander North) were reported to the ASX on the 18th of March 2013.</li> <li>The Induced Polarisation survey was conducted by Fender Geophysics. The oversight, audit and processing role is being fulfilled by Kim Frankcombe of ExploreGeo.</li> <li>The geophysical survey type is Induced Polarisation and the layout of the survey (termed the "array type") is termed Double Offset Dipole-Dipole. This configuration is one of many which are commonly referred to as 3D IP.</li> <li>Specifically the array is composed of two receiver lines and a central transmitter line. All lines are oriented East-West. The receiver lines are "offset" from the transmitter line by 200m to the north and south.</li> <li>The transmitter used is a GDD TxII 5000 watt unit and receivers used are GDD 16 channel units.</li> <li>The survey uses an alternating current based on a 2 second cycle.</li> <li>The survey was designed to totally cover the areas of interest outlined by</li> </ul>



Criteria	JORC Code explanation	Commentary
		detailed gravity at the Overlander and Andy's Hill prospects.  The specifics of the gravity and magnetic modelling were reported to the ASX on the 26th of November 2014.
Drilling techniques	<ul> <li>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).</li> </ul>	· Not Applicable
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	· Not Applicable
Logging	<ul> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	· Not Applicable
Sub- sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> </ul>	· Not Applicable



Criteria	JORC Code explanation	Commentary
	<ul> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>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.</li> </ul>	<ul> <li>The Induced Polarisation method is commonly used to determine the location of disseminated sulphides. An external current is applied and charge separation can occur on sulphide grain boundaries. When the transmitter is turned off the charges decay away. The degree to which this current forms and the nature of its decay once the primary current is switched off can be measured. Rock masses containing disseminated pyrite and chalcopyrite become more readily charged than barren ground.</li> <li>The geophysical method used by Hammer Metals is entirely appropriate to the style of mineralisation being sought.</li> <li>The specifics of the gravity and magnetic modelling were reported to the ASX on the 26th of November 2014.</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>All data was reviewed on site by the Fender Geophysics team leader before being transferred to the offices of Fender Geophysics (for further Quality Assurance). The data is then transferred to the Perth office of geophysical consultancy ExploreGeo for audit and processing.</li> </ul>
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>Transmitter and receiver electrode positions area located to GPS accuracy. Height data was derived from a Shuttle radar altimeter DEM</li> <li>The accuracy of horizontal positional data would be +-5m.</li> </ul>



Criteria	JORC Code explanation	Commentary
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	Hammer is exploring the area for a large tonnage Copper deposits with an iron oxide affinity.  The geophysical data density was tailored to discriminate large targets and is appropriate to the scale of target being sought.
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	The primary line direction is perpendicular to the general geological, structural and interpreted mineralisation trends in the area.
Sample security	The measures taken to ensure sample security.	All data was reviewed on site by the Fender Geophysics team leader before being transferred to the offices of Fender Geophysics and then onto the office of ExploreGeo.      Data was reviewed daily for quality and accuracy. Data was also transferred daily to Hammer Metals for secure server storage.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	<ul> <li>As mentioned above data was collected and reviewed twice by personnel of Fender Geophysics then reviewed by personnel of ExploreGeo.</li> <li>ExploreGeo is tasked as an independent program manager. No major issues with data quality arose during the program.</li> </ul>



## 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	<ul> <li>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.</li> <li>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.</li> </ul>	<ul> <li>The Andy's Hill and Overlander surveys are located within EPM14232, which is held 100% by Mt Dockerell Mining Pty Ltd (a 100% owned subsidiary of Hammer Metals Limited).</li> <li>The above-mentioned tenement is in good standing with the Qld DME</li> </ul>
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul> <li>No detailed Induced Polarisation work has been conducted over the area by other parties. This is the first survey of this type over the Andy's Hill and Overlander Prospects.</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	The mineralisation style discussed in this release is Iron-Oxide Copper Gold (IOCG). The closest example of this style is the Ernest Henry Deposit to the north of Cloncurry.  At Overlander North and Andy's Hill the host rocks are strongly red rockmagnetite altered calc-silicates and amphibolites assigned to the Corella Formation.
Drill hole Information	<ul> <li>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:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> </ul>	· Not Applicable



Criteria	JORC Code explanation	Commentary
	<ul> <li>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.</li> </ul>	
Data aggregation methods	<ul> <li>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.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	· Not Applicable
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>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').</li> </ul>	· Not Applicable.
Diagrams	<ul> <li>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.</li> </ul>	· See attached figures
Balanced reporting	<ul> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low</li> </ul>	·The processed Induced Polarisation data is represented in this release as three dimensional surfaces called



Criteria	JORC Code explanation	Commentary
	and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	chargeability iso-surfaces. The surfaces illustrate the modelled capacitive ability of the rock volume which they enclose.  Resistivity iso-surfaces are also presented in this release. The surfaces illustrate the modelled conductive ability of the rock volume which they enclose. Resistivity data is routinely collected when conducting an Induced Polarisation survey or this type.  The specifics of the gravity and magnetic modelling were reported to the ASX on the 26th of November 2014.
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.	· Refer to the release.
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	It is envisioned that these areas will be further examined with a view to defining drill targets as soon as possible.