

## ASX RELEASE

19 December 2022

### DIRECTORS / MANAGEMENT

**Russell Davis**  
Chairman

**Daniel Thomas**  
Managing Director

**Ziggy Lubieniecki**  
Non-Executive Director

**David Church**  
Non-Executive Director

**Mark Pitts**  
Company Secretary

**Mark Whittle**  
Chief Operating Officer

### CAPITAL STRUCTURE

#### ASX Code: HMX

Share Price (16/12/2022)	\$0.068
Shares on Issue	821m
Market Cap	\$56m
Options Unlisted	20m
Performance Rights	8m
Cash (30/9/2022)	\$3.6m

## MOUNT HOPE AREA DELIVERS HIGH-GRADE COPPER ACROSS MULTIPLE TARGETS

- **Four high-grade copper/gold prospects** delineated from recent drilling in the highly prospective Mount Hope region.
- Drilling at Mascotte and Mascotte Junction (located 900m along strike from Mascotte) delivered the following significant intercepts:
  - **6m at 3.73% Cu and 1.47g/t Au from 50m** in HMMARC002 within a broader mineralised envelope of **14m at 1.80% Cu and 0.66g/t Au from 50m at Mascotte**;
  - **6m at 2.04% Cu, 0.03g/t Au, 684ppm Co and 0.17% Ni** from 30m and **1m at 5.85% Cu and 0.14g/t Au** (from 18m) in HMMARC003 within a mineralised envelope of 33m at 0.73% Cu at **Mascotte Junction**.
- **The gossan breccia outcrop at Mascotte Junction extends over a strike length of 250m and is up to 30m wide.** These dimensions suggest that there is significant potential for further mineralisation at depth in the area.
- Drilling at The Stubby recorded the following mineralised intercepts:
  - **6m at 1.57% and 0.13g/t Au from 28m** within a mineralised envelope of 32m at 0.62% and 0.05g/t Au from 9m in hole HMSHRC002B; and
  - **3m at 2.14% Cu and 0.44g/t Au from 45m** in HMSHRC002
- **The main mineralised trend at The Stubby is not adequately tested** with two holes abandoned after encountering old workings at greater depths than anticipated by Hammer.
- **All three target areas will be prioritised for drilling in early 2023**, in addition to follow-up drilling at the exciting **South Hope** prospect.
- Drilling at Kalman, Kalman West, Hardway and Ajax now completed, with assays expected to be returned throughout January 2023.



**Figure 1.** High-grade quartz sulphide breccia from ore dump at Mount Mascotte.



**Hammer's Managing Director, Daniel Thomas said:**

*"Hammer's pipeline of high-grade copper-gold targets in the Mt Isa district continues to grow and 2023 is shaping up as a pivotal year for the company. Our exciting copper prospects now span a strike length of more than 60km of prospective mineralised trends, with many prospects having very few drill holes testing the extent of these systems. With growing mineral inventories across the region and our own extensional drill testing completed recently at the Kalman deposit, the region is shaping as one of Australia's most exciting copper districts."*

*"The team is busy preparing our exploration programs for 2023, which will aim to build on the substantial progress achieved this year. The recently identified lithium targets in the Yandal region, located near the world-class Kathleen Valley deposit, will also be tested early in the New Year – adding an exciting new dimension to our 2023 exploration campaign."*

*"All of these targets have the potential to 'move the dial' for Hammer and I look forward to sharing our progress on these prospects over the coming year."*



**Figure 2.** Mt Mascotte historical workings and drill pad for HMMARC002.

**Hammer Metals Ltd (ASX: HMX) ("Hammer" or the "Company")** is pleased to advise that it has intersected significant high-grade copper mineralisation across multiple prospects during its recently completed maiden drilling program at the Mount Hope and Mascotte group of prospects, located within the highly prospective Mount Hope area in the Mt Isa region of NW Queensland.

At Mt Mascotte, three holes were drilled for 316m with the drilling designed to test the tenor and upside potential of two targets.



The results have revealed the potential for shear zone hosted mineralisation at depth at Mt Mascotte. Notably, there is significant elevated cobalt and nickel associated with the copper-gold mineralisation.

In the Mount Hope region, a further seven holes for 861m were completed. Assays from the final hole at South Hope have been reported along with three holes at The Stubby (two of which were abandoned after hitting voids) and a single hole at the IP anomaly located at Stubby North.

This drilling is being conducted as part of a larger program covering 10 prospects within the Mount Isa Project area. This program has recently been completed and assays are pending for drilling conducted at the Kalman Cu-Au-Mo-Re deposit, the Ajax Cu-Au prospect and at the Hardway (Cu-REE) prospect.



**Figure 3.** Quartz Gossan Breccia from Mt Mascotte.

### **Mascotte and Mascotte Junction**

The Mascotte group consists of two prospects separated by approximately 900m, both of which are located approximately 4.5km to the east of the Mt Hope prospect.

The northern prospect, Mascotte Junction, consists of a gossan zone approximately 250m long and 30m wide. Along strike (to both north and south) from this gossan lens, the position of the controlling structure is marked by coarse grained carbonate veins to both the north and south.

The zone dips to the south-west and it is interpreted that there is a moderate southerly plunge to the zone at depth. Two artisanal shafts are located in this zone however no historic production records have been located. An examination of gossanous material at surface indicates that the gossan textures have been produced by chalcopyrite, which now weathered, have left distinctive etched shapes.

Mt Mascotte, located approximately 900m to the south, consists of a north striking, vertically dipping gossan zone which has been historically mined by a small open cut and two shafts (now collapsed).

In total, three holes were drilled for 316m with two holes at Mascotte Junction and a single hole at Mt Mascotte. Full intercepts are listed in table 1.

Significant intercepts at Mt Mascotte include:

- **6m at 3.73% Cu and 1.47g/t Au (from 50m) and 1m at 1.97% Cu and 0.23g/t Au (from 63m) in HMMARC002.** These higher-grade zones occurred within a mineralised envelope of **14m at 1.80% Cu and 0.66g/t Au from 50m.**

Significant intercepts from Mascotte Junction include:

- **6m at 2.04% Cu, 0.03g/t Au, 0.07% Co and 0.17% Ni (from 30m) in HMMARC003 and 1m at 5.85% Cu and 0.14g/t Au (from 18m) and.** These higher-grade zones occurred within a mineralised envelope of **33m at 0.73% Cu**; and
- 2m at 1.05% Cu (from 18m) in HMMARC001.

The work undertaken by Hammer indicates that there is potential at Mount Mascotte to define mineralisation at depth and down-plunge and plans are underway to include these prospects in 2023 drilling campaigns.

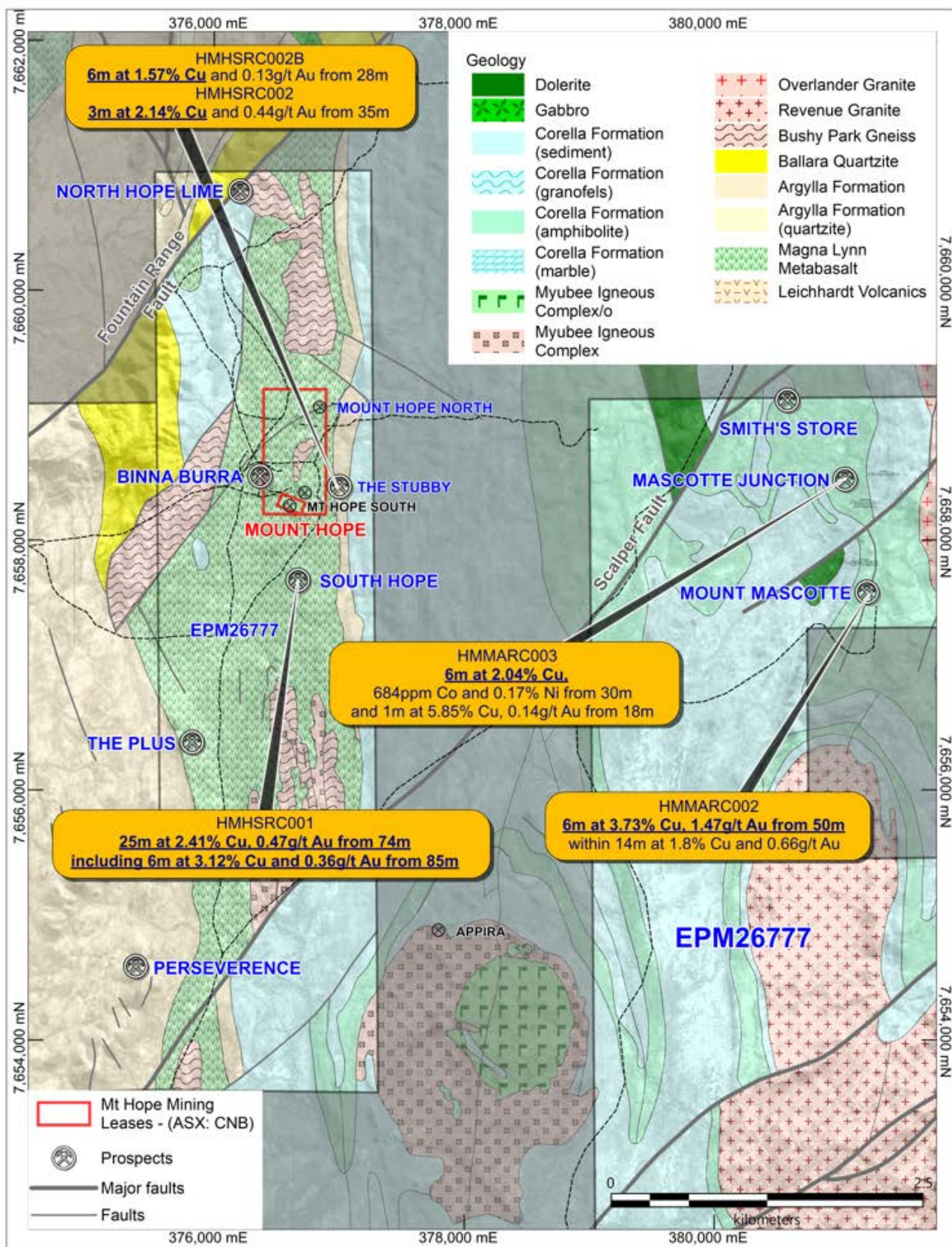


**Figure 4.** Gossan zone at Mt Mascotte.

**Table 1.** Mascotte Group drilling showing significant intercepts (derived from Lab assays) utilising a 0.1% Cu cut-off

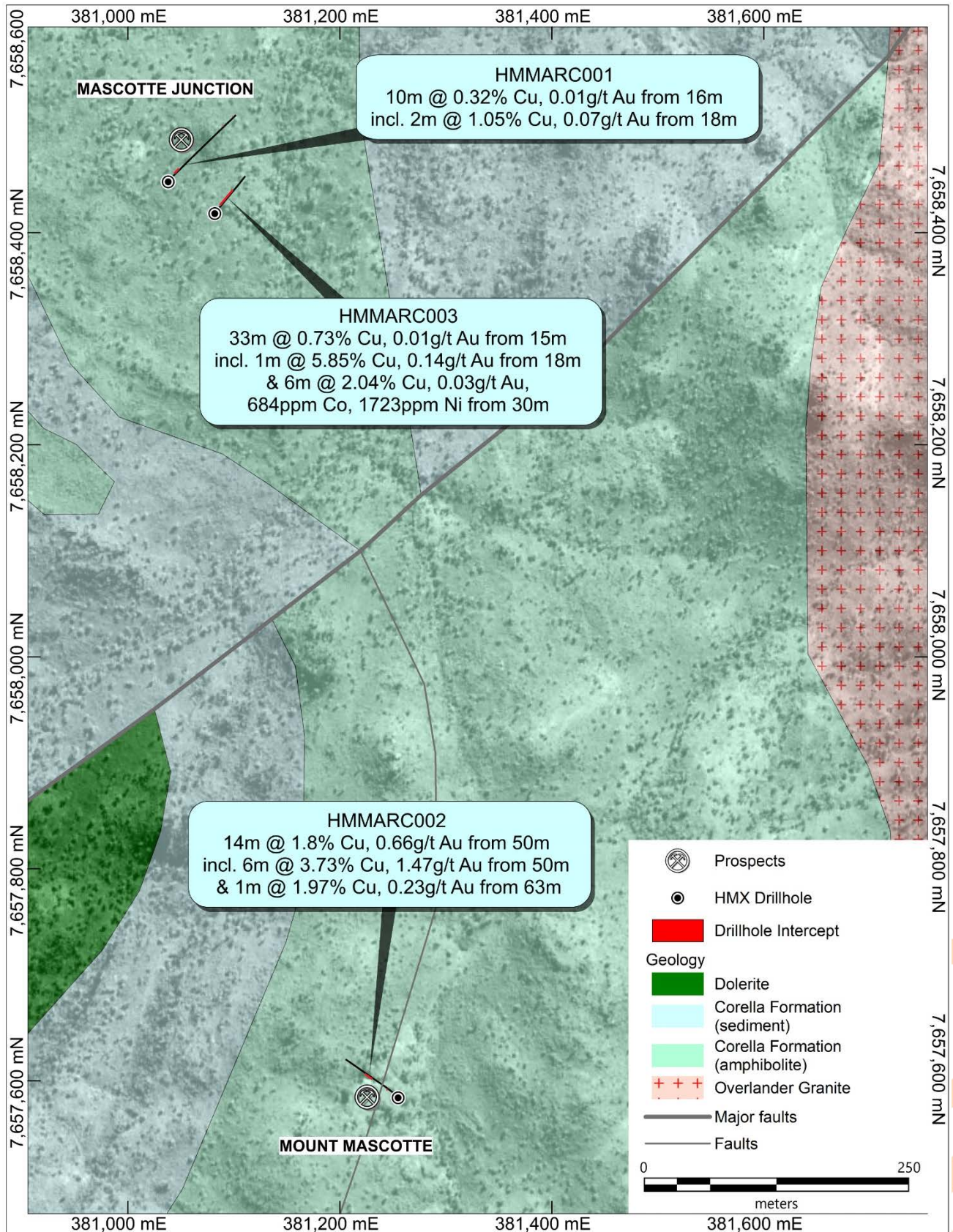
Target	Hole	E	N	RL	Dip	Az_GDA	TD (m)	incl.	From (m)	To (m)	Interval	Au (g/t)	Cu (%)	Co (ppm)	Ni (ppm)	Comment
Mascotte Junction	HMMARC001	381038	7658449	422	-55	45	138		16	26	10	0.01	0.32	147	476	
								incl.	18	20	2	0.07	1.05	286	992	
									116	117	1	0.01	0.12	82	201	
									134	135	1	0.01	0.87	53	170	
	HMMARC003	381082	7658419	423	-55	41	78		15	48	33	0.01	0.73	341	751	
								incl.	18	19	1	0.14	5.85	241	523	
&								30	36	6	0.03	2.04	684	1723		
Mt Mascotte	HMMARC002	381255	7657585	430	-55	310	100		0	1	1	0.15	0.19	52	60	
									20	22	2	0.02	0.12	113	31	
									50	64	14	0.66	1.80	100	114	
								incl.	50	56	6	1.47	3.73	188	164	
								&	63	64	1	0.23	1.97	91	319	
Coordinates and azimuth relative to GDA94 Zone54																





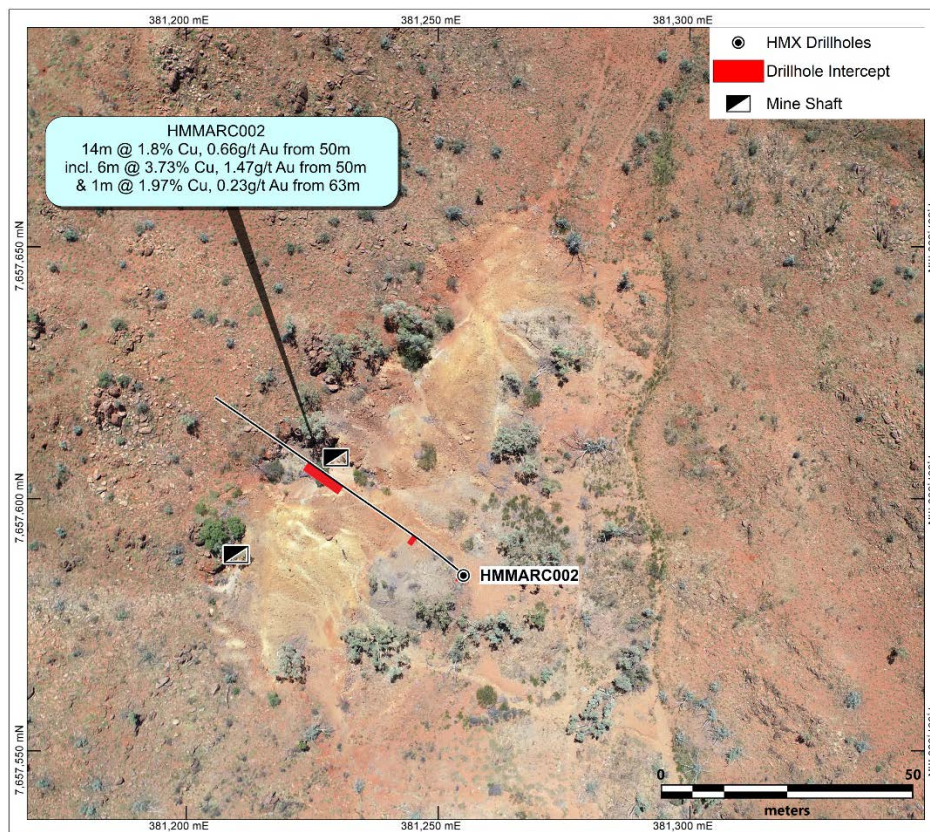
**Figure 5.** Overview plan of the Mascotte region showing the location relative to the Mt Hope area.



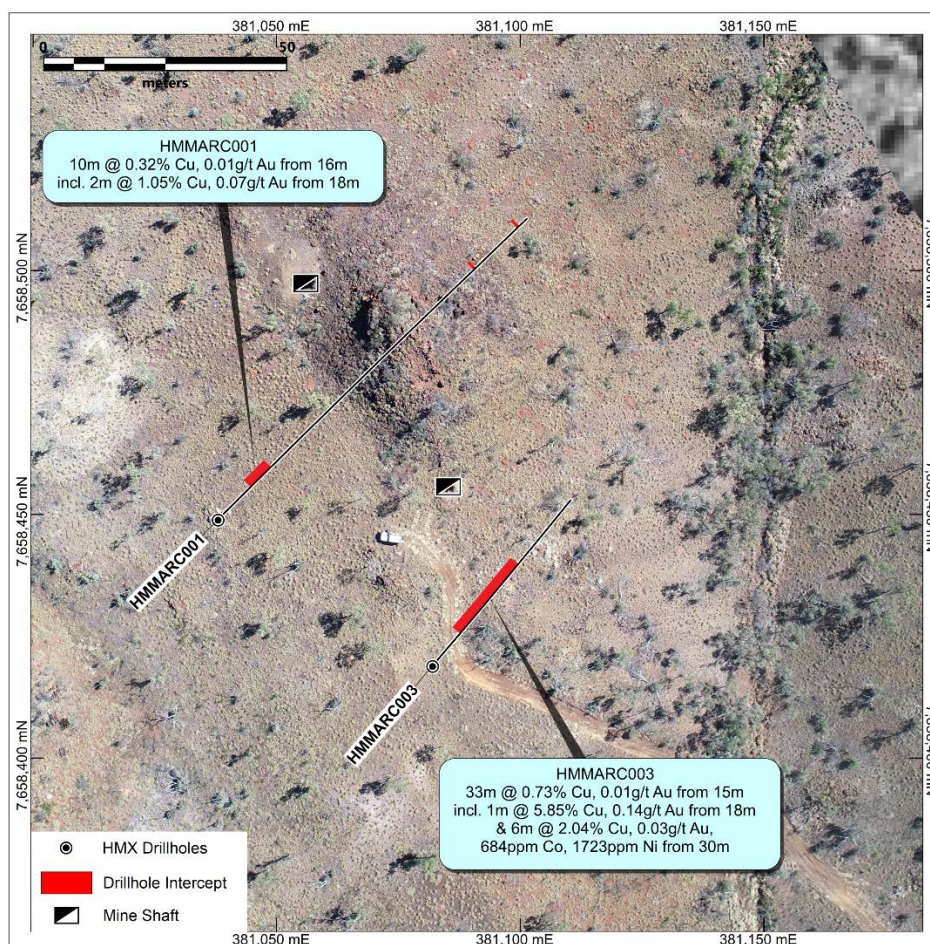


**Figure 6.** Plan view showing the relative location of Mt Mascotte and Mascotte Junction.





**Figure 7. Plan view of Mt Mascotte.**



**Figure 8. Plan view of Mascotte Junction.**



## The Stubby

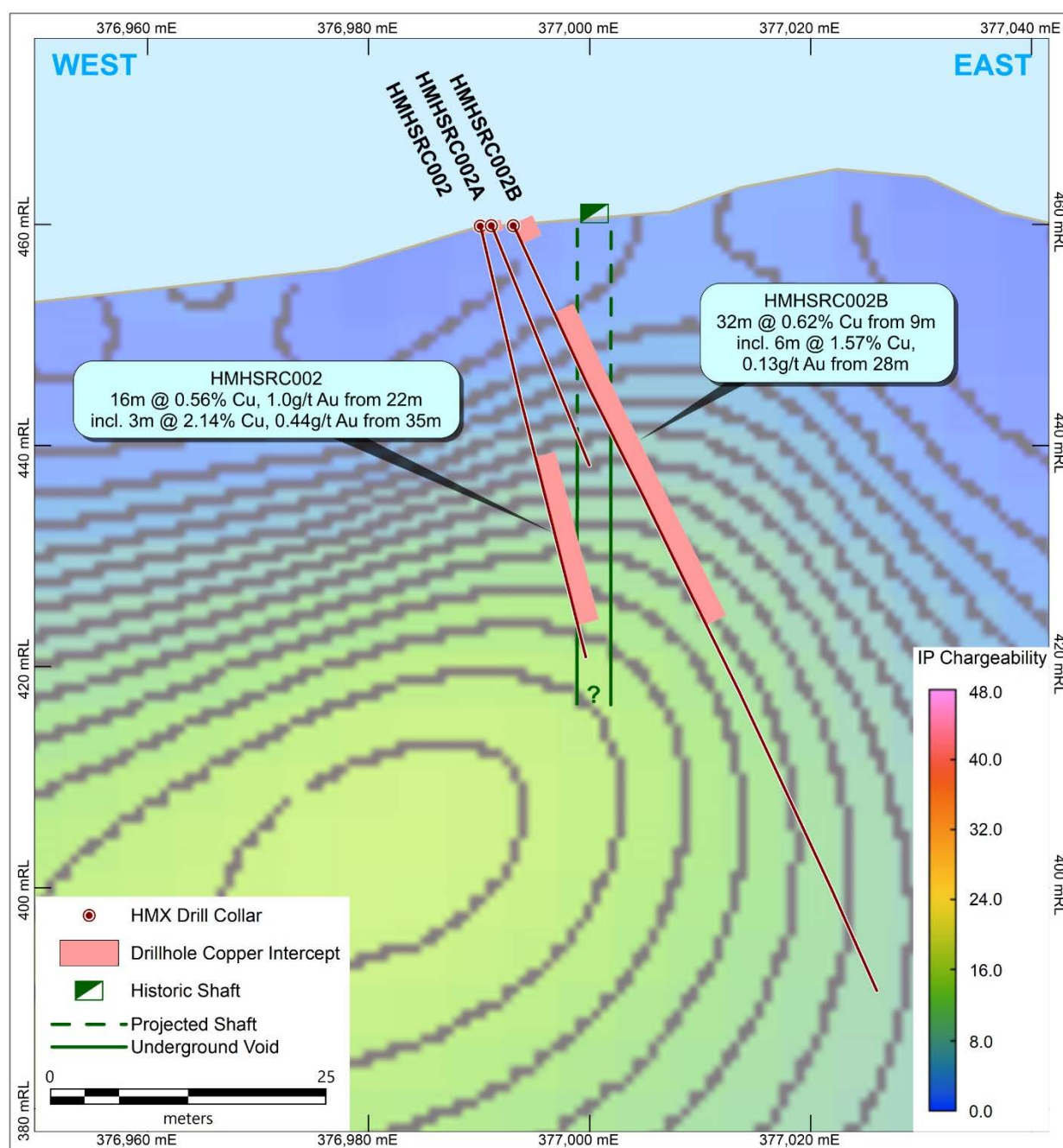
At The Stubby, three holes were drilled for 143m to test artisanal workings. Unfortunately, the first two holes hit underground voids and had to be abandoned. Hammer was surprised by the depth of these voids, indicating more significant workings are located at The Stubby than originally anticipated.

Copper mineralisation encountered in one of the abandoned holes may represent a second mineralised zone located in the hangingwall of the mined sequence.

Significant recorded intercepts include:

- **6m at 1.57% Cu and 0.13g/t Au from 28m** within a mineralised envelope of 32m at 0.62% Cu and 0.05g/t Au from 9m in hole HMSHRC002B; and
- **3m at 2.14% Cu and 0.44g/t Au from 45m** in HMSHRC002

Further drill testing at this prospect will be conducted as part of Hammer's next Reverse Circulation program targeting the lode at depth below the existing workings.



**Figure 9.** Cross section 7658435mN (The Stubby prospect), looking north. Back drop is IP chargeability.



## Mount Hope North IP Anomaly

Hammer targeted an IP anomaly located approximately 400m to the south-east of the North Mount Hope workings. The single 300m hole intersected minor mineralisation which was considered insufficient to explain the strength of the modelled IP response.

Further testing of this anomaly is required with the potential for an obliquely trending mineralised zone. Further IP surveys will be conducted in order to model the response better in three dimensions before undertaking any follow-up drilling.

## Hope South

The drilling at Hope South followed on from the initial promising drilling results of 25m at 2.41% Cu and 0.47g/t Au from 74m in HMHSRC001 and 4m at 3.03% Cu from 39m in HMHSRC003 (refer to ASX announcement dated 22 November 2022).

HMHSRC004, which was drilled to test a vertical plunge position, failed to intersect significant mineralisation. Subsequent down-hole EM conducted on HMHSRC005 indicated that the mineralisation is south-plunging.

The plunge position will be tested in a drill program which is expected to commence in February 2023.

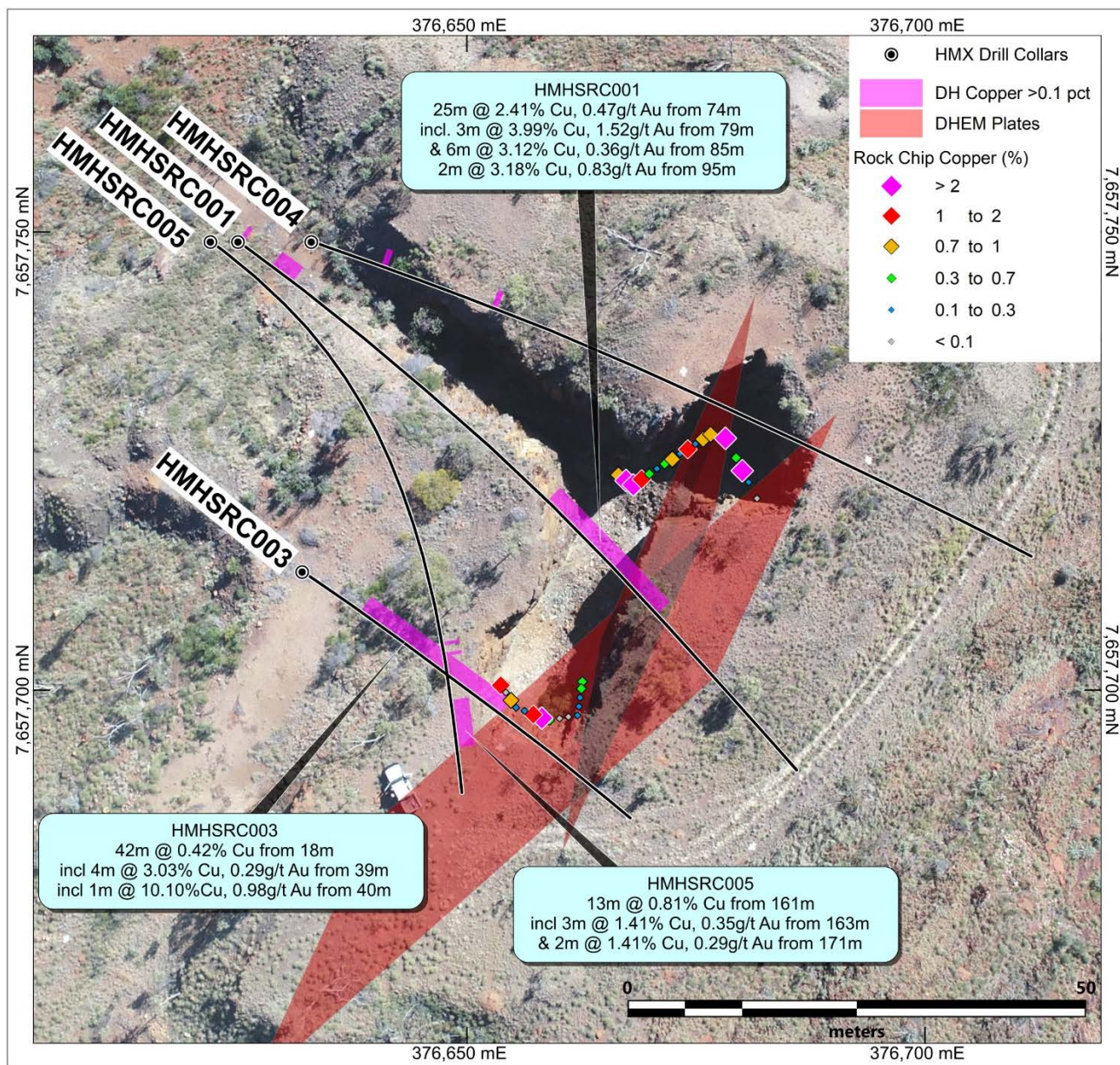
**Table 3.** Mount Hope drilling showing significant intercepts (derived from Lab assays) utilising a 0.1% Cu cut-off. Refer to ASX announcement dated 22 November 2022 for information on previous drilling at Hope South.

Target	Hole	E	N	RL	Dip	Az_GDA	TD (m)	incl.	From (m)	To (m)	Interval	Au (g/t)	Cu (%)	Co (ppm)	Ni (ppm)	Comment		
Stubby	HMHSRC002A	376991	7658436	460.0	-65	62	24		Hole abandoned									
	HMHSRC002	376990	7658436	460	-75	55	41		0	1	1	0.06	0.45	48	44			
									22	38	16	0.10	0.56	69	55			
	incl.	35	38	3	0.44	2.14	73	62										
	HMHSRC002B	376993	7658434	460	-64	113	78		0	2	2	0.04	0.18	29	17			
									9	41	32	0.05	0.62	52	55			
incl.								28	34	6	0.13	1.57	65	68				
Hope South	HMHSRC004	376633	7657749	467	-55	109.4	132		14	15	1	0.01	0.13	60	51			
									34	35	1	0.01	0.34	46	55			
Stubby North	HMHSRC006	377002	7658705	451	-55	79.75	300		78	79	1	0.02	0.12	114	53			
									192	193	1	0.02	0.10	53	63			
Coordinates and azimuth relative to GDA94 Zone54																		

As outlined in Hammer's announcement on 20 July 2022, Figure 5 and 11 shows the current tenure boundaries as recorded by the Queensland Department of Resources.

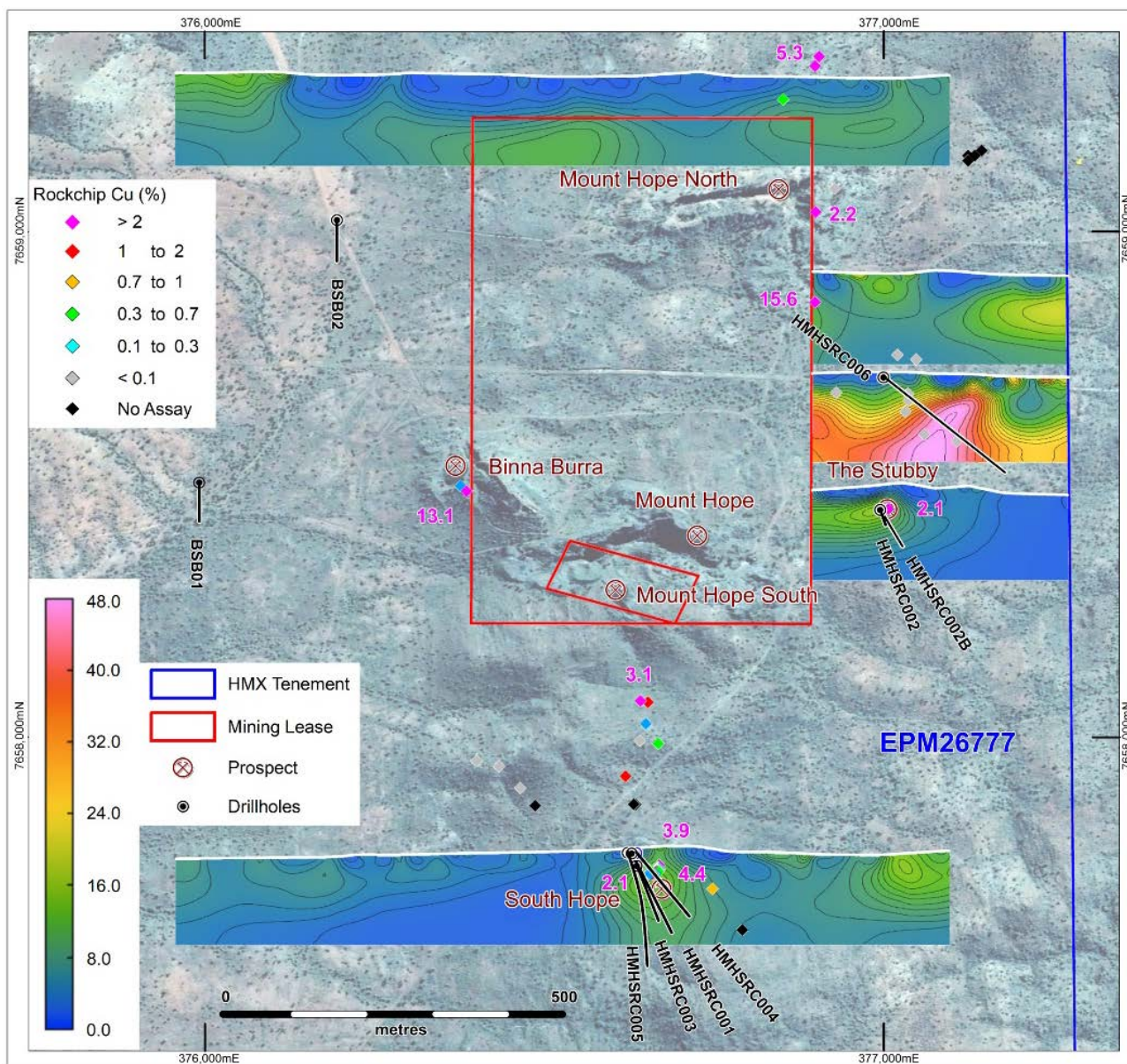
Hammer was alerted to potential changes to the southern boundary of the Mining Lease encapsulated within Hammer's EPM26777 tenement. Hammer has submitted a formal response to the issue, seeking clarification and certainty with respect to the status of the Mining Lease and its boundary. Hammer will keep the market informed of any further developments.





**Figure 10.** Plan view of South Hope (refer to ASX announcement dated 22 November 2022).





**Figure 11.** Plan view of Hope region (refer to ASX announcement dated 22 November 2022 for information on previous drilling).



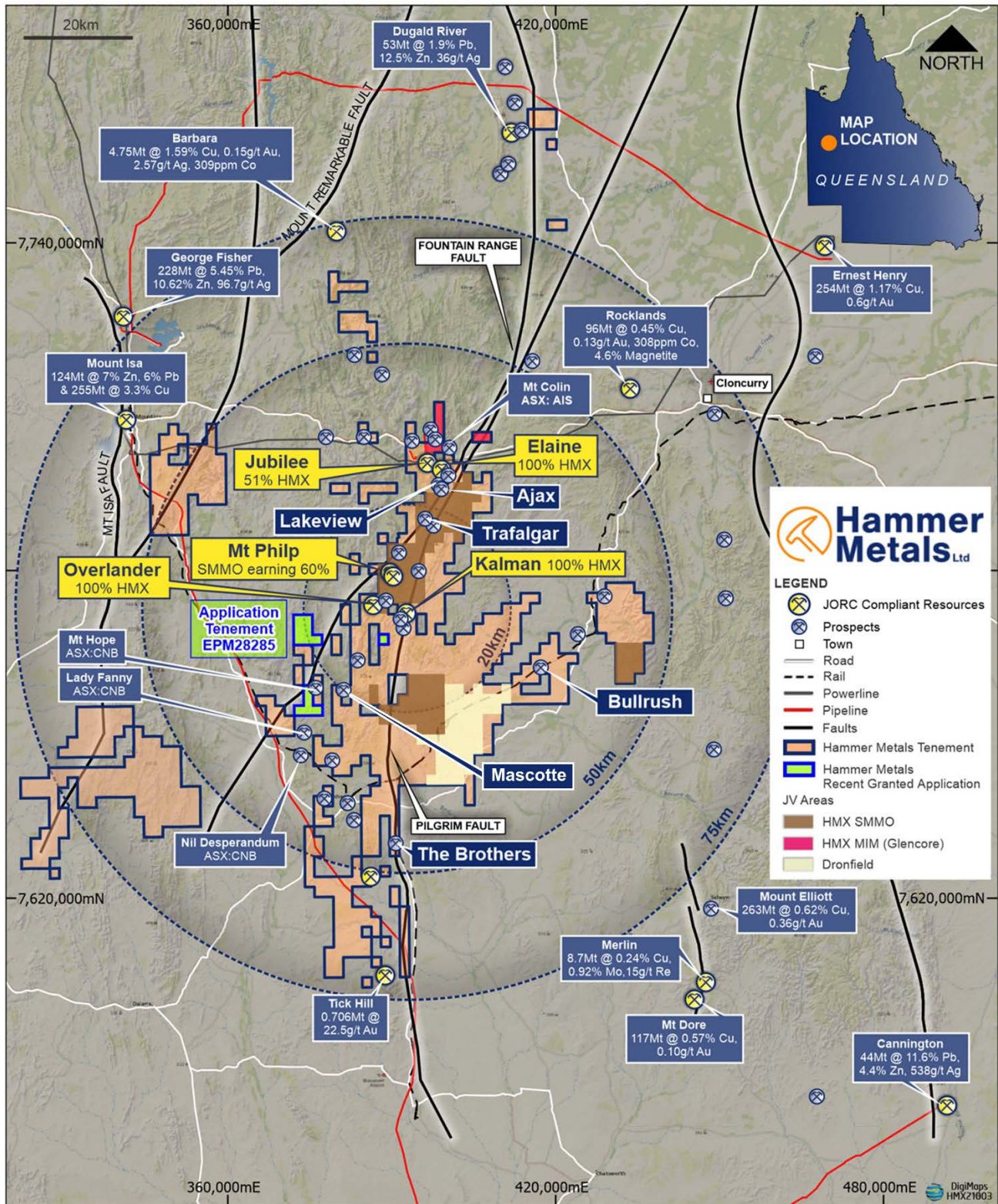


Figure 12: Mt Isa Project Area

### **Expected Newsflow**

- **December:** Lakeview JORC Resource
- **January:** Kalman drilling results,
- **January:** Kalman West, Ajax and Hardway drilling results
- **January:** HMX Q2 Quarterly
- **Q1 2023:** Follow up drilling programs: South Hope, Mascotte, Mascotte Junction and Stubby.
- **Q1 2023:** Yandal Lithium and Gold air core drilling program
- **Q1/Q2 2023:** Kalman Resource Upgrade

*This announcement has been authorised for issue by the Board of Hammer Metals Limited in accordance with ASX Listing Rule 15.5.*

For further information please contact:

**Daniel Thomas**  
Managing Director

T +61 8 6369 1195

E [info@hammermetals.com.au](mailto:info@hammermetals.com.au)

### **Media Enquiries:**

Nicholas Read – Read Corporate

T +61 9 9388 1474

E [info@readcorporate.com.au](mailto:info@readcorporate.com.au)

**- END -**

### **About Hammer Metals**

Hammer Metals Limited (ASX: HMX) holds a strategic tenement position covering approximately 2,600km<sup>2</sup> within the Mount Isa mining district, with 100% interests in the Kalman (Cu-Au-Mo-Re) deposit, the Overlander North and Overlander South (Cu-Co) deposits and the Elaine (Cu-Au) deposit. Hammer also has a 51% interest in the Jubilee (Cu-Au) deposit. Hammer is an active mineral explorer, focused on discovering large copper-gold deposits of Ernest Henry style and has a range of prospective targets at various stages of testing.

Hammer holds a 100% interest in the Bronzewing South Gold Project located adjacent to the 2.3 million-ounce Bronzewing gold deposit in the highly endowed Yandal Belt of Western Australia

### **Competent Person Statements**

The information in this report as it relates to exploration results and geology was compiled by Mr. Mark Whittle, who is a Fellow of the AusIMM and an employee of the Company. Mr. Whittle, who is a shareholder and option-holder, has sufficient experience which is relevant to the styles of mineralisation and types of deposit under consideration and to the activities 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.

The information in this report that relates to previous exploration results was prepared and first disclosed under a pre-2012 edition of the JORC code. The data has been compiled and validated. It is the opinion of Hammer Metals that the exploration data is reliable. Nothing has come to the attention of Hammer Metals that causes it to question the accuracy or reliability of the historic exploration results. In the case of the pre-2012 JORC Code exploration results, they have not been updated to comply with 2012 JORC Code on the basis that the information has not materially changed since it was last reported.



## JORC Table 1 report – Mount Isa Project Exploration Update

- This table is to accompany an ASX release updating the market with drilling results from the Mascotte and Mt Hope group of prospects (EPM26777).
- All ancillary information presented in figures herein has previously been reported to the ASX.
- Historic exploration data noted in this, and previous releases has been compiled and validated. It is the opinion of Hammer Metals that the exploration data are reliable.

### Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<p><i>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).</i></p> <p><i>These examples should not be taken as limiting the broad meaning of sampling. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></p> <p><i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></p> <p><i>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.</i></p>	<p>The drilling was conducted using reverse circulation.</p> <p><b>Drilling</b> Drill chip samples were taken at dominantly 1m intervals. When multiple metre intervals were sampled, a riffle split of each metre interval was conducted with the split portions then being combined to produce a composite sample.</p> <p>Where mineralisation was anticipated or encountered, the sample length was reduced to 1m with lab submission of the 1m samples.</p> <p><b>Drilling Analysis</b> All samples submitted for assay underwent fine crush with 1kg riffled off for pulverising to 75 microns.</p> <p>Samples were submitted to ALS for:</p> <ul style="list-style-type: none"> <li>• Fire Assay with AAS finish for gold.</li> <li>• 4 acid digest followed by ICP-MS for a comprehensive element suite.</li> </ul> <p>Portable XRF analysis was conducted in the field on each 1m interval.</p> <p>Re-analyses will be conducted as required to investigate element repeatability.</p>
<b>Drilling techniques</b>	<p><i>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).</i></p>	<p><b>Drilling</b> Holes were drilled by Bullion drilling using a Schramm 685 drilling rig using the reverse circulation drilling method.</p>
<b>Drill sample recovery</b>	<p><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></p>	<p><b>Drilling</b></p>

Criteria	JORC Code explanation	Commentary
	<p><i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></p> <p><i>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.</i></p>	<p>Sample recoveries were generally in excess of 80%. Recoveries are typically low in the first 5m of each hole.</p> <p>In holes where recovery or significant sampling bias was observed, the hole was terminated.</p> <p>No sample recovery bias has been noted.</p>
<b>Logging</b>	<p><i>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.</i></p> <p><i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></p> <p><i>The total length and percentage of the relevant intersections logged.</i></p>	<p><b>Drilling</b></p> <p>All drilling was geologically logged by Hammer Metals Limited Geologists.</p> <p>Quantitative portable XRF analyses were conducted on metre intervals on site.</p> <p>All metres drilled were analysed by the lab methods listed above and lab assays are reported herein.</p>
<b>Sub-sampling techniques and sample preparation</b>	<p><i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></p> <p><i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></p> <p><i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></p> <p><i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></p> <p><i>Measures taken to ensure that the sampling is representative of the insitu material collected, including for instance results for field duplicate/second-half sampling.</i></p> <p><i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></p>	<p><b>Drilling</b></p> <p>Samples consist of RC drill chips.</p> <p>Samples from the hole were collected by a three-way splitter with A and B duplicates taken for every sample.</p> <p>Samples were taken at dominantly one metre intervals however where 2 or 4 metre composites were created, samples were composited by riffle splitting material from each one metre sample bag.</p> <p>Where evidence of mineralisation was encountered or anticipated, the sample length was reduced to 1m.</p> <p><b>Drilling QA/QC</b></p> <p>Standard reference samples and blanks were each inserted into the laboratory submissions at a rate of 1 per 25 samples. Duplicate samples were taken at an interval of approximately 1 in 50 samples.</p> <p><b>Sampling Comment</b></p> <p>The sample collection methodology and sample size is considered appropriate to the target-style and drill method, and appropriate laboratory analytical methods were employed.</p>
<b>Quality of assay data</b>	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used</i>	<b>Drilling</b>



Criteria	JORC Code explanation	Commentary
<b>and laboratory tests</b>	<p><i>and whether the technique is considered partial or total.</i></p> <p><i>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.</i></p> <p><i>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.</i></p>	<p>All samples were analysed for gold by flame AAS using a 50gm charge.</p> <p>Each sample will also be analysed by 4-acid multielement ICP OES and MS.</p> <p>In addition to the Hammer in-house certified reference materials, the assay laboratory maintains a comprehensive QAQC regime, including check samples, duplicates, standard reference samples, blanks and calibration standards.</p>
<b>Verification of sampling and assaying</b>	<p><i>The verification of significant intersections by either independent or alternative company personnel.</i></p> <p><i>The use of twinned holes.</i></p> <p><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></p> <p><i>Discuss any adjustment to assay data.</i></p>	<p><b>Drilling</b></p> <p>All lab analyses were verified by alternate company personnel.</p> <p>Assay files were received electronically from the laboratory.</p>
<b>Location of data points</b>	<p><i>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.</i></p> <p><i>Specification of the grid system used.</i></p> <p><i>Quality and adequacy of topographic control.</i></p>	<p><b>Drilling reporting</b></p> <p>Datum used is GDA 94 Zone 54.</p> <p>RL information will be merged at a later date utilising the most accurately available elevation data. Drillholes will be surveyed by DGPS prior to rehabilitation.</p>
<b>Data spacing and distribution</b>	<p><i>Data spacing for reporting of Exploration Results.</i></p> <p><i>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.</i></p> <p><i>Whether sample compositing has been applied.</i></p>	<p><b>Drilling</b></p> <p>This release documents results from multiple prospects along the Trafalgar to Pearl region. The drill density is not sufficient to establish mineralisation continuity</p> <p>Sample compositing has been applied to calculate intercepts.</p>
<b>Orientation of data in relation to geological structure</b>	<p><i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></p> <p><i>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.</i></p>	<p><b>Drilling</b></p> <p>Drill holes are generally oriented as close to perpendicular as possible to the orientation of the targets based on interpretation of previous exploration.</p>
<b>Sample security</b>	<p><i>The measures taken to ensure sample security.</i></p>	<p><b>Drilling Sampling</b></p> <p>Pre-numbered bags were used, and samples were transported to ALS by company</p>



Criteria	JORC Code explanation	Commentary
		personnel. Samples were packed within sealed polywoven sacks.
<b>Audits or reviews</b>	<i>The results of any audits or reviews of sampling techniques and data.</i>	<b>Drilling reporting</b> The dataset associated with this reported exploration has been subject to data import validation. All assay data has been reviewed by two company personnel. No external audits have been conducted.

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<i>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.</i>  <i>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.</i>	The Mt Isa Project consists of 34 tenements. The drilling reported herein was conducted on EPM26777. This tenement is held by Mt Dockerell Mining Pty Ltd, a 100% owned subsidiary of Hammer Metals Limited. The areas reported herein are <b>not</b> part of the Mt Isa East Joint Venture with Sumitomo Metal Mining Oceania ("SMMO").  SMMO has the right to earn a 60% interest by expending \$6,000,000 by 31 March 2024 with a minimum expenditure commitment of \$1,000,000 by 31 March 2020. No proportional ownership change occurs until such time as the \$6,000,000 is expended and the current SMMO interest is 0%.  See ASX announcement dated 25 November 2019, for details of the Joint Venture.
<b>Exploration done by other parties</b>	<i>Acknowledgment and appraisal of exploration by other parties.</i>	Previous holders held title either covering the tenement in part or entirely and previous results are contained in Mines Department records.
<b>Geology</b>	<i>Deposit type, geological setting and style of mineralisation.</i>	The Mascotte Prospects are located on EPM26777. Mineralisation is structurally emplaced in a foliation parallel shear zone and is associated with Quartz veining.  At Mt Hope the style of mineralisation is similar to that of Mt Mascotte with mineralisation occurring in structurally controlled positions associated with Quartz and calcite gangue material.
<b>Drill hole Information</b>	<i>A summary of all information material to the understanding of the exploration results</i>	See the attached tables.



Criteria	JORC Code explanation	Commentary
	<p>including a tabulation of the following information for all Material drill holes:  easting and northing of the drill hole collar  elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar  dip and azimuth of the hole  down hole length and interception depth  hole length.</p> <p>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.</p>	
<b>Data aggregation methods</b>	<p>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.</p> <p>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.</p> <p>The assumptions used for any reporting of metal equivalent values should be clearly stated.</p>	<p><b>Drilling</b>  Drillhole intercepts are quoted at a 0.1% Cu cut-off with included intercepts quoted to highlight zones of increased width or grade. The reader should assume that there are no other grades encountered in the hole apart from those quoted in the body of this report.</p>
<b>Relationship between mineralisation widths and intercept lengths</b>	<p>These relationships are particularly important in the reporting of Exploration Results.</p> <p>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</p> <p>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').</p>	<p><b>Drilling</b>  The relationship between intersected and true thicknesses is difficult to interpret with any certainty along both trends due to the drilling density and the presence of cross cutting structures.</p>
<b>Diagrams</b>	<p>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.</p>	<p>See attached figures.</p>
<b>Balanced reporting</b>	<p>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced avoiding misleading reporting of Exploration Results.</p>	<p><b>Drilling</b>  Drillhole intercepts are quoted at a 0.1% Cu cut-off with included intercepts quoted to highlight zones of increased width or grade. The reader should assume that there are no other grades encountered in the hole apart from those quoted in the body of this report.</p>

Criteria	JORC Code explanation	Commentary
<b>Other substantive exploration data</b>	<i>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.</i>	All relevant information is disclosed in the attached release and/or is set out in this JORC Table 1.
<b>Further work</b>	<p><i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></p> <p><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></p>	Both regions will be subject to further drilling in the first quarter of 2023.