# ASX Announcement (ASX: HMX)

HAMMER

9th October 2017

# **EXPLORATION UPDATE**

# Start Date of Drilling Confirmed and Program Expanded to Include Millennium Cobalt Project

**Hammer Metals Limited** (Hammer or the Company) **(ASX: HMX)** is pleased to advise that a drill rig has been secured and the planned start date of the +3000 metres drilling program at its Mount Isa Project in Northwest Queensland has been confirmed as October 15<sup>th</sup>.

The program as announced to the ASX on September 21<sup>st</sup> 2017 will target the Kalman West gold prospect and the Hammertime copper-gold prospect with follow-on drilling planned at the Elaine, Serendipity and Pharaoh targets - all within Hammer's 100%-owned tenements. The Jubilee copper-gold prospect, which is part of the Mt Frosty JV between Hammer (51%) and MIM (49%), will also be drilled pending finalizing an agreed program and budget for the JV area.

In addition with the signing of the Definitive Agreement with Global Energy Metals (GEMC) on the Millennium cobalt-copper-gold project (as announced to the ASX on September 29<sup>th</sup> 2017), Hammer is pleased to advise that the partners are well advanced in planning a program of approximately 2500 metres of drilling at Millennium designed to infill and potentially expand the current Mineral Resource. It is anticipated that this drilling (fully funded by GEMC) will also be undertaken in Q4 2017.

Hammer Metals Limited (ASX: HMX) Hammer Metals holds a strategic tenement position covering approximately 3,200km² 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, the Millennium (Cu-Co-Au) deposit as well as the recently acquired Elaine-Dorothy (Cu-Au) deposit. Hammer is an active mineral explorer, focused on discovering large copper-gold deposits of the Ernest Henry style and has a range of prospective targets at various stages of testing.

For further information, please contact:

Alex Hewlett | Executive Director & CEO Russell Davis | Executive Chairman

info@hammermetals.com.au M: +61 (0) 419195087

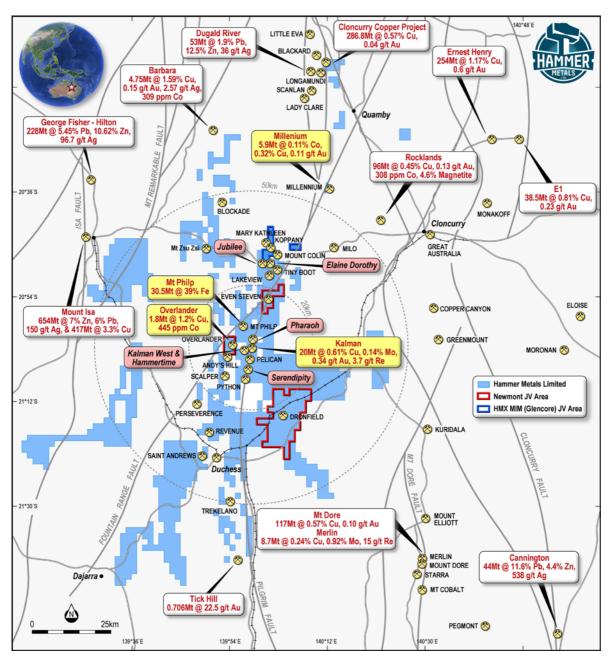
# **Competent Person's Statement:**

# **Exploration Results**

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. Whittle who is a shareholder and option-holder, 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.



Where Company notes Mineral Resource Estimates which have been previously announced it confirms that it is not aware of any new information or data that materially affects the information included in those announcements and all material assumptions and technical parameters underpinning the resource estimates in those announcements continue to apply and have not materially changed.



Mount Isa Project showing the areas targeted by the first drilling phase



# Notes on the Kalman Resource Estimate on Copper Equivalence Calculation

The Kalman Mineral Resource Estimate was updated in August 2016 in accordance with the JORC Code (2012 Edition). (Refer to the ASX Release dated 27th September 2016 for full details of the Resource Estimate.)

## Kalman Deposit Inferred Mineral Resource Estimate

(Reported at 0.75% CuEq cut-off above 100m RL and 1.4% CuEq cut-off below 100m RL)

Classification	Mining Method	CuEg Cut-Off	Tonnes Kt	CuEq %	Cu %	Mo %	Au ppm	Ag Ppm	Re ppm
Indicated	Open Pit	0.75%	7,100	1.5	0.48	0.12	0.27	1.4	2.9
Inferred	Open Pit	0.75%	6,200	1.6	0.44	0.15	0.24	1.5	3.9
Inferred	Underground	1.40%	7,000	2.4	0.89	0.16	0.50	2.9	4.5
Total		0.500	20,000	1.8	0.61	0.14	0.34	1.9	3.7

- Note: (1) Numbers rounded to two significant figures
- Note: (2) Totals may differ due to rounding
- Note: (3) CuEq = Cu + (0.864268 \* Au) + (0.011063 \* Ag) + (4.741128 \* Mo) + (0.064516 \* Re)

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. Metal prices provided are:

The CuEq calculation is based solely on commodity prices without assumptions about recovery or payability of the different metals. Prices agreed to by Hammer were a reflection of the market as at 14/02/2014 and forward-looking forecasts provided by consensus analysis. Metal prices provided are:

Cu: U\$\$7,165/t Au: U\$\$1,324.80/oz Ag: U\$\$22.40/oz Mo: U\$\$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.

# Assumed Metallurgical Recoveries

Process Stage	Molybdenum Recovery (%)	Rhenium Recovery (%)	Copper Recovery (%)	Gold Recovery (%)	Silver <sup>(1)</sup> Recovery (%)
Bulk Rougher	95	86	95	82	82
Overall	86	77	86	74	74

• 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.

# Notes on the Millennium Resource Estimate and Notes on Copper Equivalence Calculation

The Millennium Mineral Resource Estimate was conducted in December 2016 in accordance with the JORC Code (2012 Edition). (Refer to the ASX Release dated 6<sup>th</sup> December 2016 for full details of the Resource Estimate.)

Millennium Deposit Inferred Mineral Resource Estimate

(Reported at 0.7% CuEq and 1% CuEq cut-offs across four domains)

#### Millennium November 2016 Mineral Resource - Inferred

CuEa Cut-off		CuEa (%)	Cu (%)	Co (%)	Au (ppm)	
1.0%	3,070,000	1.29	0.35	0.14	0.12	
0.7%	5,890,000	1.08	0.32	0.11	0.11	

- Note: (1) Totals may differ due to rounding
- Note: (2) CuEq= Cu\_pct+(Co\_pct\*5.9)+(Au\_ppm\*0.9)+(Ag\_ppm\*0.01)
- The Copper Equivalent (CuEq) equation has been calculated to reflect current and forecast pricing. CuEq grades were calculated using estimated block grades for Co, Cu, Au and Ag. The CuEq calculation is based solely on commodity prices without assumptions about



recovery or payability of the different metals. Prices used by Hammer were a reflection of the market as at October 1st 2016 and forward looking forecasts provided by consensus analysis.

Metal prices used were:

Cu: US\$4,600/t;

• Co: US\$27,000/t;

Au: US\$1,330/oz; and

Ag: US\$20/oz.

The copper equivalent equation is:

 $CuEq = Cu\_pct + (Co\_pct * 5.9) + (Au\_ppm * 0.9) + (Ag\_ppm * 0.01)$ 

#### **Notes on the Overlander Mineral Resource Estimate**

The 100%-owned Overlander Project is situated 60 kilometres to the southeast of the mining centre of Mount Isa in North West Queensland and 6 kilometres to the west of Hammer's Kalman copper-gold-molybdenum-rhenium deposit. It is a high-priority target area for both shearhosted copper and IOCG copper mineralisation. The Overlander North and South Copper Deposits are situated approximately one kilometre apart within a common shear zone.

Drilling in the Overlander North deposit extends to a vertical depth of approximately 430m and the mineralisation was modelled from surface to a depth of approximately 420m below surface. Drilling in the Overlander South deposit extends to a vertical depth of approximately 215m and the mineralisation was modelled from surface to a depth of approximately 180m below surface. The resource estimates are based on good quality RC and diamond drilling data. Drill hole spacing is predominantly on a 40m by 20m spacing with additional drill holes between sections targeted at the higher-grade cores of the deposits.

Following additional drilling in 2014 and 2015, The Mineral Resource Estimates for the Overlander North and South shear-hosted copper Deposits were revised by Haren Consulting and reported in accordance with the guidelines of the JORC Code (2012 Edition). They contain combined resources of 1,772,000 tonnes at 1.2% copper in the indicated and inferred categories (Refer to the ASX release dated August 26<sup>th</sup> 2015)

#### **Overlander North and South Mineral Resource Estimate**

(Reported at 0.7% Cu cut-off)

Overlander North Resource								
Classification	T	Cu Co		Cu	Co			
Classification	Tonnes	%	ppm	Tonnes	Tonnes			
Indicated	253,000	1.4	254	3,414	64			
Inferred	870,000	1.3	456	11,350	396			
Total	1,123,000	1.3	410	14,764	461			

Overlander South Resource								
Classification	T	Cu Co		Cu	Co			
Classification	Tonnes	%	ppm	Tonnes	Tonnes			
Indicated	-	-	-	-	-			
Inferred	649,000	1	500	6,352	327			
Total	649,000	1	500	6,352	327			

Overlander North and South Combined Mineral Resource								
Classification	Tonnes	Cu	Co	Cu	Co			
Classification	ionnes	% ppm		Tonnes	Tonnes			
Indicated	253,000	1.4	254	3,414	64			
Inferred	1,518,000	1.2	476	17,700	723			
Total	1,772,000	1.2	445	21,112	788			

## Notes on the Mt Philp Resource Estimate

The Mineral Resource Estimate is based on 48 diamond and reverse circulation (RC) drillholes completed in 2011 for a total of 3,801 metres (m). Drilling comprises fans located on a nominal 100 m pattern along the strike length of the ironstone. The Mineral Resource was estimated and reported in-house by Cerro Resource NL.

The current resource totals 19.1 million tonnes (Mt) grading 41.4% iron and 37.9% silica (Table 1-1) in the Indicated category and 11.4 million tonnes (Mt) grading 33.8% iron and 47.4% silica in the Inferred category. This resource is open at depth.

A resource estimate was first completed and reported to ASX by previous owners on 28<sup>th</sup> September 2012 and there has been no material change to the resource base during the financial year. A review of the resource estimate was completed for the purpose of compiling this statement and the principles and methodology of the resource estimation procedure and the resource classification procedure have been reconciled with the CIM Resource Reserve definitions and found to comply.

# Mt Philp Deposit Mineral Resource Estimate

Mt Philp Deposit Resource									
Classification Tonnes Fe P SiO2 Al2O3 TiO2 LO						LOI			
		%	%	%	%	%	%		
Indicated	19,110,000	41	0.02	38	1.3	0.38	0.29		
Inferred	11,400,000	34	0.02	48	2	0.46	0.31		
Total	30.510.000	39	0.02	42	1.6	0.41	0.3		

- Note: (1) Numbers rounded to two significant figures to reflect appropriate levels of confidence
- Note: (1) Totals may differ due to rounding