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(HKEX STOCK CODE: 1208) (ASX STOCK CODE: MMG)

# THIRD QUARTER PRODUCTION REPORT FOR THE THREE MONTHS ENDED 30 SEPTEMBER 2019

This announcement is made pursuant to Rule 13.09 of the Rules Governing the Listing of Securities of The Stock Exchange of Hong Kong Limited (Listing Rules) and the Inside Information Provisions (as defined in the Listing Rules) under Part XIVA of the Securities and Futures Ordinance (Chapter 571 of the Laws of Hong Kong).

The board of directors (Board) of MMG Limited (Company or MMG) is pleased to provide the Third Quarter Production Report for the three months ended 30 September 2019.

The report is annexed to this announcement.

By order of the Board

MMG Limited

GAO Xiaoyu

CEO and Executive Director

Hong Kong, 17 October 2019

As at the date of this announcement, the Board comprises nine directors, of which two are executive directors, namely Mr Gao Xiaoyu and Mr Xu Jiqing; three are non-executive directors, namely Mr Guo Wenqing (Chairman), Mr Zhang Shuqiang and Mr Jiao Jian; and four are independent non-executive directors, namely Dr Peter William Cassidy, Mr Leung Cheuk Yan, Ms Jennifer Anne Seabrook and Professor Pei Ker Wei.

# THIRD QUARTER PRODUCTION REPORT

FOR THE THREE MONTHS ENDED 30 SEPTEMBER 2019									
	3Q19	3Q19 VS 3Q18	3Q19 VS 2Q19	YTD	YTD19 VS YTD18				
Copper cathode (tonnes)	3Q19	V3 3Q10	V3 2Q13	110	V3 11D10				
Kinsevere	18,495	-11%	12%	47,497	-22%				
Total	18,495	-11%	12%	47,497	-22%				
Copper (contained metal in concentrate, tonnes)									
Las Bambas	96,990	12%	15%	282,815	3%				
Rosebery	378	30%	17%	1,079	2%				
Total	97,369	12%	15%	283,894	3%				
Zinc (contained metal in concentrate, tonnes)									
Dugald River	47,296	23%	32%	121,810	15%				
Rosebery	21,332	11%	1%	60,896	6%				
Total	68,628	19%	21%	182,707	12%				
Lead (contained metal in concentrate, tonnes)									
Dugald River	5,750	5%	3%	16,388	44%				
Rosebery	5,640	-11%	-9%	17,736	-22%				
Total	11,390	-4%	-3%	34,125	0%				
Molybdenum (contained metal in concentrate, tonnes)									
Las Bambas	467	-17%	-17%	1,542	2%				
Total	467	-17%	-17%	1,542	2%				

#### **KEY POINTS**

- Total recordable injury frequency (TRIF) of 1.25 per million hours worked for the third quarter in 2019.
- Total copper production of 115,864 tonnes and total zinc production of 68,628 tonnes was 14% and 21% higher respectively than the prior quarter, with improved operational performance across all sites.
- Dugald River delivered a record production quarter, while Las Bambas, Kinsevere and Dugald River all delivered record quarterly mill throughput rates.
- Road access to Las Bambas has been disrupted by a series of road blocks in sections of the road between 50 and 250 kilometres from Las Bambas, in the province of Chumbivilicas, Cusco, since 22 September. Dialogue continues with community leaders and government to seek a resolution. Mining and production have been progressively impacted from late last week. On 15 October the Government of Peru declared a State of Emergency for a section of the road and authorities have now commenced actions to clear the road.

- Assuming unrestricted road access is restored within the next few days, Las Bambas production for 2019 is expected to be marginally below the guidance range of 385,000 to 405,000 tonnes, with C1 costs at the higher end of the US\$1.15 to US\$1.25/lb range.
- More targeted exploration focus around existing operating hubs continues to demonstrate good early success.
- Las Bambas drilling continues to define mineralisation at the Chalcobamba Southwest Zone. This is within 300 metres of the current Chalcobamba ore reserve pit and should drive expansion of the Chalcobamba pit design.
   Highlights include 108.0m @ 1.00% Cu in drillhole CHS19-045, from 39.0m downhole and 175.1m @ 0.54% Cu, and 453ppm Mo, in drillhole CHS19-041, From 0.9m downhole.

#### **COMMODITY PRICES, MARKETING AND SALES**

COMMODITY PRICES, MARKETING AND SALES										
	Q	UARTER-AVERAG	GE .	QUARTER CLOSE						
	3Q19	2Q19	3Q18	3Q19	2Q19	3Q18				
Metal Price*										
Copper (US\$/lb)	2.63	2.77	2.77	2.60	2.71	2.80				
Gold (US\$/oz)	1474	1310	1213	1486	1411	1185				
Lead (US\$/lb)	0.92	0.86	0.95	0.95	0.87	0.91				
Molybdenum (US\$/lb)	11.84	12.19	11.81	11.78	12.00	11.80				
Silver (US\$/oz)	17.02	14.89	14.99	17.26	15.22	14.31				
Zinc (US\$/lb)	1.06	1.25	1.15	1.08	1.17	1.17				

Sources: zinc, lead and copper: LME cash settlement price; Molybdenum: Platts; gold and silver: LBMA.

Copper and zinc prices softened further during the third quarter as market sentiment was dominated by geo-political events such as the continuing US-China trade dispute and uncertainty over Brexit. US dollar strength also weighed on metal prices. As is typical in in times of macroeconomic uncertainty, precious metals prices were firmer.

Although softening global economic conditions are leading to lower growth in copper consumption in the near term, mine supply is also constrained due to lower output at some operations and limited new projects to fill the supply gap. Notwithstanding the above, copper smelter capacity and production in China continues to expand, adding to demand for imported copper concentrate which is up 11% in the year to August and is expected to reach another annual record this year. The strong demand for concentrate and flat mine production ensured that treatment and refining charges remained well below annual benchmark levels throughout the quarter.

Chinese zinc smelter production continued to expand during the quarter. In contrast, global refined zinc consumption is likely to contract this year. Despite this inventory build, the global zinc market remains in deficit. Total stocks on the LME and SHFE were at the equivalent of only 4 days' global consumption during the quarter. Despite the rise in Chinese zinc smelter production, the concentrate market remained comfortably supplied during the quarter with an increase in mine supply as new projects, including Dugald River, ramp up during 2019.

#### PROVISIONAL PRICING

The following table provides a summary of the metal that was sold but which remains provisionally priced at the end of the third quarter 2019 and the month that final average pricing is expected to occur at the time of provisional invoicing.

OPEN PRICING AT 1 OCTOBER 2019											
	OCT-19	NOV-19	DEC-19	JAN-19	TOTAL						
Copper (tonnes cathode and copper contained in concentrate)	29,641	10,868	17,769	22,610	80,889						
Gold (ounces)	10,298	937			11,235						
Lead (tonnes)	7,587				7,587						
Molybdenum (pounds)	943,742	690,525			1,634,268						
Silver (ounces)	865,422	76,654			942,076						
Zinc (tonnes)	20,529	8,547	12,825		41,901						

#### **OPERATIONS**

#### LAS BAMBAS

		LAS BAMBA	S		
	3Q19	3Q19 VS 3Q18	3Q19 VS 2Q19	YTD	YTD19 VS YTD18
Copper (tonnes)	96,990	12%	15%	282,815	3%
Molybdenum (tonnes)	467	-17%	-17%	1,542	2%

Las Bambas produced 96,990 tonnes of copper in copper concentrate in the third quarter of 2019, 15% above the prior period and 12% higher than the third quarter 2018. The increase is attributable to uninterrupted operations for most of the quarter compared to second quarter 2019 and improved operational performance across the mine and the mill.

Mining performance was underpinned by recent investments in new mine fleet and higher utilisation across the fleet. These improvements will continue to support higher mining and development rates as we continue to open up the mine in the coming periods.

Record quarterly mill throughput was driven by a series of operational improvements throughout the grinding circuit. Recovery rates also increased due to more effective management of oxides and favourable ore characteristics.

Molybdenum production was 17% lower than the prior quarter due primarily to lower grades.

#### Background and update on Las Bambas social challenges

Las Bambas operations interact with 3 regions, 4 provinces, 14 districts and with more than 70 communities (17 communities within its direct area of influence and approximately 53 communities along the 450km road to the rail transfer station). The mine is located in Apurímac, previously recognised as Peru's least developed region and now it's fastest growing. Apurímac leads regional growth with an average growth rate of 30.3% in the years 2012 – 2017 (Peru: 2.7% on average).

While Las Bambas maintains a positive relationship with most communities, the operation continues to face increasing road blocks with demands for the negotiation of benefit agreements, road compensation and inclusion within the statutory area of direct influence for the Las Bambas operation. Additionally, In August 2019 regional protests against the Tia Maria project in Peru restricted traffic in and out of the Matarani Port for 17 days. This affected Las Bambas logistics as well as that of other producers in the region.

Since 22 September, road access to Las Bambas has been disrupted by a series of road blocks in sections of the road between 50 and 250 kilometres from Las Bambas, in the province of Chumbivilicas, Cusco. The community demands include the repeal of the categorisation of a national road, road use compensation, new benefit agreements and inclusion in the area of direct influence.

Mining and production have been progressively impacted from late last week. On 15 October and following a series of attempts to establish dialogue, the Government of Peru declared a State of Emergency along a section of the logistics road, which has now allowed the Peruvian authorities to commence actions to clear the road.

Las Bambas' approach to social management is based on building strong, trusting, relationships. The Las Bambas social team is located in the communities along the transport corridor. Since 2010, Las Bambas has invested more than US\$360 million in social development programs, including schools, communal buildings, health centres and the promotion of new businesses. This is in addition to this 3% of all revenues which are paid as royalties and are distributed to the various local governments of the districts of Apurimac. Since commencing commercial production Las Bambas has paid more than US\$250 million in royalties and invested more than US\$200 million in improving the national road used for its logistics. Logistics operations are undertaken under strict control and with high standards including significant actions to mitigate impacts and a continuous monitoring program. Mitigation actions include dust suppression using more than 50 community operated water trucks along the road.

Las Bambas is committed to continuing to work with government and the local communities to establish sustainable solutions to these persistent issues.

#### Las Bambas Outlook

Assuming that unrestricted road access is restored in the coming days and the roads remain clear for the transit of vehicles, production of copper for 2019 is now expected to be marginally below the 385,000-405,000 tonnes guidance range, with C1 costs towards the upper end of the US\$1.15 to US\$1.25/lb range.

As the road blockages have prevented concentrates being transported from the mine to the port, some shipments to customers have been delayed. Current stockpiles of contained copper on site have increased to around 65,000 tonnes, which will now be progressively drawn down and shipped over the remainder of this year and the first quarter of 2020.

Development works at Las Bambas to extend the current production profile over the medium term are progressing with the installation of the third ball mill and drilling, permitting and engineering works for the Chalcobamba project continuing during the quarter. Whilst this project has experienced some permitting delays to date, good progress continues to be made. Las Bambas is continuing to work with authorities and communities to mitigate the impact of these delays and avoid any further delays.

Following the maiden Chalcobamba drilling update provided last quarter, further drilling continues to define mineralisation at the Chalcobamba Southwest Zone. It is anticipated that further drilling will demonstrate that the Chalcobamba Southwest Zone is continuous with the main Chalcobamba mineralisation and should drive expansion of the Chalcobamba pit design. Detailed results of the drilling activities are included in the Geoscience and Discovery section below

#### **DUGALD RIVER**

		DUGALD RIVER			
	3Q19	3Q19 VS 3Q18	3Q19 VS 2Q19	YTD	YTD19 VS YTD18
Contained metal in concentrate					
Zinc (tonnes)	47,296	23%	32%	121,810	15%
Lead (tonnes)	5,750	5%	3%	16,388	44%

The successful ramp up of Dugald River continued, with a record production quarter of 47,296 tonnes of zinc in zinc concentrate, 32% above the previous quarter. Higher production was attributable to higher mining, higher throughput, improved recoveries and higher ore grades.

Mine development works continued to open a higher average number of operating stopes, resulting in a 9% uplift in mined ore compared with the second quarter. Successful de-bottlenecking projects combined with improved mine production has enabled mill throughput to be sustained above design capacity for the sixth consecutive quarter. Mine

development works will continue to be a major focus for the remainder of 2019 and 2020 to ensure stable feed to the mill with all pre-commissioning ore stockpiles now depleted.

Dugald River also produced 5,750 tonnes of lead concentrate, up 3% from the previous quarter.

Consistent with previous guidance, 2019 production for Dugald River expected to be between 165,000-175,000 tonnes of zinc in zinc concentrate, with C1 costs between US\$0.70 and US\$0.75/lb.

#### **KINSEVERE**

		KINSEVERE			
	3Q19	3Q19 VS 3Q18	3Q19 VS 2Q19	YTD	YTD19 VS YTD18
Copper Cathode (tonnes)	18,495	-11%	12%	47,497	-22%

Kinsevere produced 18,495 tonnes of copper cathode in the third quarter, a 12% increase on the previous quarter driven by record mill throughput and improved mining performance.

Ore mined increased 12% as mining of the Mashi pit was completed and material movement in the Central pit was ahead of plan. As a result of this transition, average mined ore grades were 2.5% compared to 2.0% in the prior quarter. The record mill throughput was achieved due to higher mill utilisation (93% vs. 91.6% in the prior quarter), improved plant process stability, more favourable ore characteristics and better management of third-party ore feed.

Consistent with previous guidance, copper cathode production is expected to be between 65,000-70,000 tonnes and C1 costs within the range of US\$2.15-US\$2.25/lb.

Kinsevere's oxide Ore Reserves (as at 30 June 2018) represent a life of mine for oxide operations ending in approximately 2023. MMG has been working on developing the full potential of the Kinsevere mine through significant investment in resource extension drilling, particularly on tenements held inside a 50-kilometre radius of the Kinsevere mine, as well as evaluating options for mining and processing of sulphide ores present on the Kinsevere lease. Further detail on some of the early success of this exploration program is provided in the Geoscience and Discovery section below. In late 2017 MMG commenced the Kinsevere Expansion Project study. This study is currently evaluating the engineering options for the addition of a sulphide ore and a cobalt processing circuit alongside the existing oxide circuit.

#### **ROSEBERY**

		ROSEBERY			
	3Q19	3Q19 VS 3Q18	3Q19 VS 2Q19	YTD	YTD19 VS YTD18
Contained metal in concentrate					
Zinc (tonnes)	21,332	11%	1%	60,896	6%
Lead (tonnes)	5,640	-11%	-9%	17,736	-22%
Copper (tonnes)	378	30%	17%	1,079	2%

Rosebery produced 21,332 tonnes of zinc in zinc concentrate during the third quarter, broadly in-line with the previous quarter.

The strong and consistent performance is being supported by recent investment in new mobile fleet which is leading to increased productivity and significantly improved equipment availability, which works to offset the impacts of mining at greater depth and smaller average tonnage stopes. Increased development in the mine has resulted in access to high grade areas and stopes. Mining in this area will continue for the remainder of this year and early 2020. Focus continues toward improving zinc recoveries and production levels.

On 3 October a +2.1ML seismic event was recorded in the W-Lens section of the operation. The event has restricted access to one of the active operating areas in the short-term, with the site currently expediting alternate stopes to meet production goals for the remainder of 2019.

Consistent with previous guidance, C1 costs are estimated to be between US\$0.25-US\$0.35/lb, however, due to the seismic event, zinc production is now expected to be at the lower end of the 85,000 – 95,000 tonne range for 2019.

#### **GEOSCIENCE AND DISCOVERY**

Drilling activities were carried out at the Las Bambas operation in Peru, along with discovery and delineation of satellite copper oxide deposits within a roughly 50km radius ("RAD50") of the Kinsevere mine.

The Company's activities during the quarter have focussed on:

- Las Bambas development drilling of the Chalcobamba pit has continued to focus on identified mineralisation adjacent to existing deposit
- DRC Resource delineation drilling at the Mwepu, Nambulwa and Sokoroshe II deposits.

#### Las Bambas

Drilling continues to define both the controls and extent of the previously described, near-surface skarn and porphyry copper mineralisation at the Chalcobamba Southwest Zone (Figure 1).

The Chalcobamba Southwest Zone mineralization is located immediately to the southwest of the current Chalcobamba Ore Reserve pit, (Figure 2). Mineralization is open to the E and SE with the extent of the prospective area to the NW and SW being defined with recent drilling. The higher-grade, skarn mineralization (>1%) is controlled by favourable stratigraphy that strikes NNW and dips moderately to the SW. Drill intercepts located on the E and SE side of the prospect are dominated by porphyry style mineralization whereas the higher-grade skarn mineralization dominates but is not limited to the west.

#### Highlights include:

Hole CHS19-045 108.0m @ 1.00% Cu from 39.0m

Hole CHS19-040 15.55m @ 1.02% Cu, from 26.75m and 61.2m @ 1.26% Cu, from 55.8m

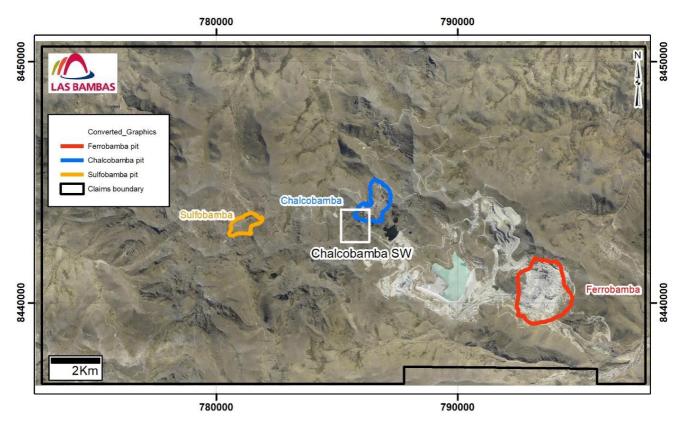
Hole CHS19-041 175.1m @ 0.54% Cu and 453ppm Mo, from 0.9m

Hole CHS19-043 198.5m @ 0.42% Cu and 326ppm Mo, from 0.0m downhole and 150.8m @ 0.28% Cu and 195ppm Mo, from 275.2m

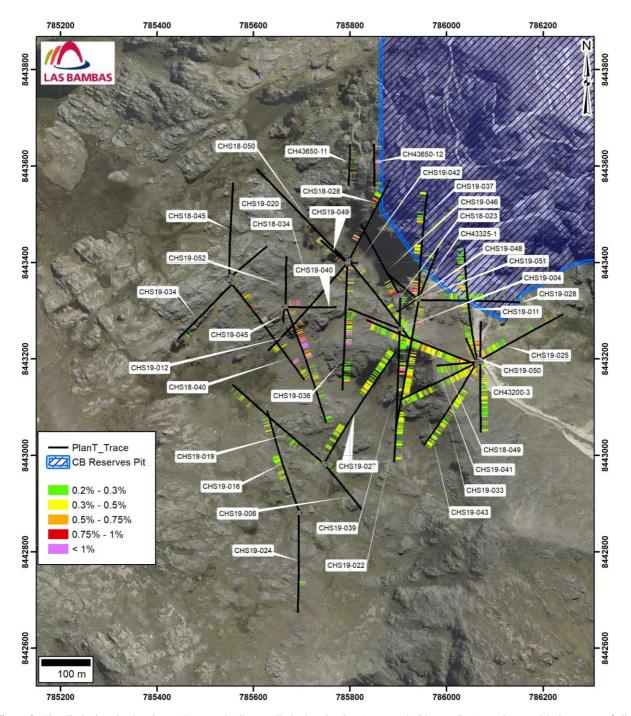
Hole CHS19-036 44.0m @ 0.98% Cu, from 210.0m and 21.6m @ 1.29% Cu, from 264.4m

All reported intercepts are downhole.

These holes were drilled as part of a drilling program for hydrogeological, geotechnical and sterilisation purposes that intersected mineralisation. Drilling will continue from the permitted platforms until new drilling locations are permitted. A summary of all drilling results to date from this program is provided in Table 2 and drillhole collars are shown in Figure 2.



**Figure 1.** Area of the Las Bambas Claim Block highlighting the location of Reserves and Resources as well as the Chalcobamba Southwest Zone exploration area.



**Figure 2.** The Chalcobamba Southwest Zone and adjacent Chalcobamba Ore Reserve pit (blue outline) are shown with the traces of all drillholes and the downhole copper grades.

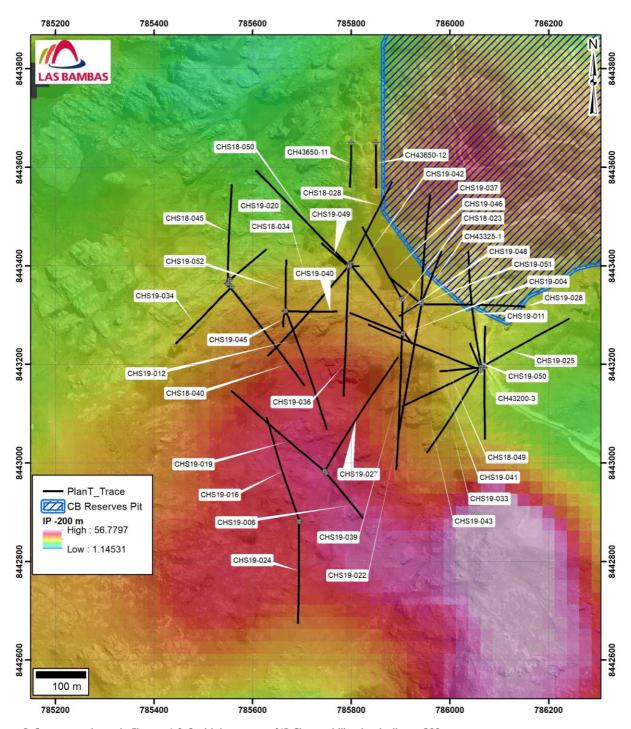


Figure 3. Same area shown in Figures 1 & 2 with base map of IP Chargeability depth slice at 200 meters.

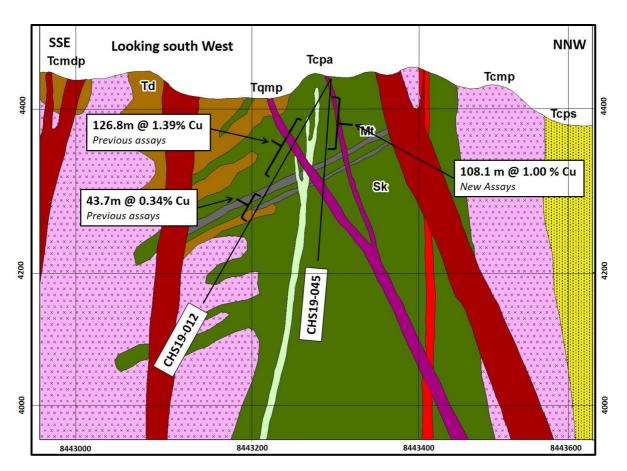


Figure 4. Geologic cross section through drillhole CHS19-012 & CHS19-045 (refer to Figure 2 for drillhole location).

#### **DRC Exploration Update**

Exploration activities in the DRC have focussed primarily on the discovery and delineation of satellite copper oxide deposits within a roughly 50km radius ("RAD50"), that may be suitable for economic exploitation at the Kinsevere mine. During the quarter, resource delineation drilling was spread across three different projects viz. Mwepu (PE1052), Nambulwa (PE539), and Sokoroshe II (PE538) (Figure 5).

#### Mwepu

The majority of the drilling was focussed on the Mwepu copper oxide prospect where 7,159m of diamond drilling and 5,590m of RC drilling were completed for the quarter. An additional 617m of RC drilling was completed this quarter at Maga South, a scout drilling target some 10km south of Mwepu.

#### Nambulwa

At the Nambulwa deposit, a 1200m long, up to 40m wide zone of semi-continuous copper oxide mineralization was reported last quarter. During the third quarter, 20 infill RC drill holes totalling 1,634m were completed to improve model confidence in the lead up to the estimation of a classified mineral resource.

#### Sokoroshe II

First pass exploration activities started at Sokoroshe II in May 2014 comprising geological mapping, surface geochemistry, and an airborne geophysical survey (magnetics, radiometrics, and EM), culminating with the first significant scout drilling intercept during 2015. Resource extension drilling in 2016 subsequently delineated a mineralised zone with dimensions of up to 650m along strike, 180m down dip and 30m thick. During the first half of 2019, resource infill drilling comprising 489m of diamond drilling and 2,946m RC drilling was completed in order to improve model confidence. Continued infill and limited extension drilling this quarter totalled 984m of diamond drilling and 619m of RC drilling.

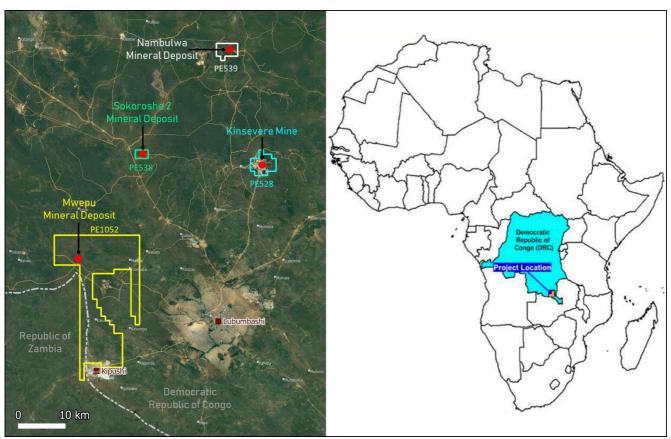


Figure 5. DRC exploration projects.

#### **CORPORATE UPDATE**

#### APPOINTMENT OF KEY EXECUTIVE

On 21 August 2019, the Company announced the appointment of Mr Jianxian Wei as Executive General Manager (EGM) Operations – Americas and a member of the Executive Committee of the Company. It was noted that Mr Suresh Vadnagra will continue in the role of EGM Operations – Americas and, after a handover period to Mr Wei, he will return to Australia.

#### FINANCIAL RESULTS

MMG reported its interim financial results on 21 August 2019 for the period ended 30 June 2019, including production results of 215,527 tonnes of copper and 114,080 tonnes of zinc across all operations. The Company reported a net loss after tax of US\$73.0 million during the first six months of 2019, including a loss of US\$81.0 million attributable to equity holders. This is primarily attributable to lower commodity prices and lower sales volumes following the community-related disruptions at Las Bambas in the first half of 2019. Net debt increased by US\$98.8 million, with lower operating cash flow due to the inventory build-up at Las Bambas and Dugald River at 30 June 2019.

# **CORPORATE DETAILS**

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#### **POSTAL ADDRESS**

GPO 2982 Melbourne, Victoria, 3001, Australia

#### MMG LIMITED EXECUTIVE COMMITTEE

GAO Xiaoyu, Chief Executive Officer and Executive Director Ross CARROLL, Chief Financial Officer XU Jiqing, Executive General Manager Commercial and Executive Director Troy HEY, Executive General Manager Stakeholder Relations Suresh VADNAGRA, Executive General Manager Operations – Americas

#### SHARE REGISTRAR

Computershare Hong Kong Investor Services Limited, 17th Floor, Hopewell Centre, 183 Queen's Road East, Hong Kong

#### **IMPORTANT DATES**

23 January 2020 - Fourth Quarter Production Report release

For details please contact Corporate Affairs below.

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Throughout this report figures in italics indicate that this figure has been adjusted since it was previously reported.

# **APPENDIX – 2019 GUIDANCE**

	GUIDANCE SUMMARY	
	2019 GUIDANCE	2018 ACTUAL
Las Bambas		
Copper – production	below 385,000 tonnes	385,299 tonnes
Copper – C1 costs	Upper end of US\$1.15 – US\$1.25 / lb	US\$1.18 / Ib
Dugald River		
Zinc – production	165,000 – 175,000 tonnes	147,320 tonnes <sup>1</sup>
Zinc – C1 costs	US\$0.70 – US\$0.75 / lb	US\$0.58 / lb <sup>2</sup>
Kinsevere		
Copper – production	65,000 - 70,000 tonnes	79,711 tonnes
Copper – C1 costs	US\$2.15 – US\$2.25 / Ib	US\$1.68 / lb
Rosebery		
Zinc – production	85,000 – 95,000 tonnes	75,721 tonnes
Zinc – C1 costs	US\$0.25 – US\$0.35 / lb	US\$(0.04)/ lb

 $<sup>^{\</sup>rm 1}$  Production volumes include 39,717 of pre-commercial production tonnes at Dugald River.

<sup>&</sup>lt;sup>2</sup> C1 cost actual shown is for the period post commercial production (from 1 May 2018).

# **APPENDIX – PRODUCTION RESULTS**

				LAS BAME				
		CED 2010		UARTER ENDE		CED 2010		O-DATE
Ore mined - copper	tonnes	<b>SEP 2018</b> 15,604,382	<b>DEC 2018</b> 17,436,646	MAR 2019 15,543,100	JUN 2019 11,743,412	<b>SEP 2019</b> 13,433,089	<b>SEP 2019</b> 40,719,600	SEP 2018 40,003,326
• •								
Ore milled - copper	tonnes	12,665,001	13,116,453	12,822,132	11,992,161	13,683,455	38,497,748	36,327,415
COPPER								
Ore mined - grade	%	0.7	0.9	0.8	0.8	0.8	0.8	0.8
Ore milled - grade	%	0.7	1.0	0.9	0.8	0.8	0.8	0.9
Recovery	%	85.5	85.0	88.5	86.6	87.9	87.7	86.7
Production								
Copper concentrate	tonnes	244,971	278,751	265,311	219,423	247,882	732,617	739,130
Grade	%	35.4	40.1	38.2	38.5	39.1	38.6	37.0
Containing	tonnes	86,797	111,865	101,452	84,373	96,990	282,815	273,434
Sales								
Total concentrate sold	tonnes	243,107	303,084	111,515	271,521	198,477	581,513	768,623
Payable metal in product sold	tonnes	83,657	112,774	41,262	99,001	72,219	212,483	271,900
GOLD & SILVER								
Payable metal in product sold - gold	OZ	23,691	31,772	10,463	27,248	21,889	59,600	76,078
Payable metal in	OZ	1,167,006	1,682,874	636,316	1,416,348	1,042,736	3,095,400	3,800,922
product sold - silver								
MOLYBDENUM								
Production								
Molybdenum concentrate	tonnes	1,132	956	1,062	1,189	1,015	3,266	3,054
Grade	%	49.4	47.0	48.2	47.3	46.0	47.2	49.5
Contained metal produced	tonnes	559	449	512	563	467	1,542	1,512
Sales								
Total product sold	tonnes	832	1,300	790	1,097	1,307	3,194	2,757
Payable metal in product sold	tonnes	418	624	377	524	612	1,512	1,365

			0	DUGALD RI' UARTER ENDEI			YEAR-TO-DATE		
		SEP 2018	DEC 2018	MAR 2019	JUN 2019	SEP 2019	SEP 2019	SEP 2018	
Ore mined	tonnes	425,293	487,498	393,004	453,261	494,443	1,340,707	986,306	
Ore milled	tonnes	475,505	490,264	457,478	428,651	542,703	1,428,831	1,265,583	
ZINC									
Ore mined - grade	%	10.0	10.0	10.5	10.3	10.5	10.4	10.4	
Ore milled - grade	%	9.7	10.2	9.9	9.9	10.3	10.1	10.1	
Recovery	%	82.9	83.6	84.7	84.5	84.6	84.6	82.8	
Production									
Zinc concentrate	tonnes	77,771	83,719	79,071	73,782	97,005	249,857	209,724	
Grade	%	49.3	49.7	48.9	48.6	48.8	48.8	50.1	
Containing	tonnes	38,377	41,641	38,665	35,850	47,296	121,810	105,680	
Sales									
Total product sold	tonnes	83,316	79,870	55,084	95,148	90,059	240,290	212,018	
Payable metal in product sold	tonnes	33,705	32,821	22,676	38,634	36,474	97,784	88,727	
LEAD									
Ore mined - grade	%	1.8	1.7	1.7	1.9	1.7	1.8	1.8	
Ore milled - grade	%	1.8	1.7	1.6	1.9	1.6	1.7	1.8	
Recovery	%	65.2	62.5	67.7	68.3	64.3	66.7	60.9	
Production									
Lead concentrate	tonnes	9,118	9,336	8,730	9,147	9,588	27,464	20,106	
Grade	%	60.3	56.7	58.1	60.8	60.0	59.7	56.7	
Containing	tonnes	5,501	5,297	5,076	5,563	5,750	16,388	11,396	
Sales									
Total product sold	tonnes	5,013	12,753	4,313	10,727	10,600	25,640	14,217	
Payable metal in product sold	tonnes	2,782	7,037	2,299	5,927	6,042	14,267	7,315	
SILVER									
Ore milled – grade	g/t	52.1	51.5	47.9	59.3	53.5	53.5	50.3	
Payable metal in product sold	OZ	315,998	451,712	128,644	368,674	351,027	848,346	427,075	

				KINSEVE	RE				
			Q	<b>UARTER ENDE</b>	D		YEAR-T	YEAR-TO-DATE	
		SEP 2018	DEC 2018	MAR 2019	JUN 2019	SEP 2019	SEP 2019	SEP 2018	
Ore mined - copper	tonnes	904,144	730,283	600,765	544,845	607,922	1,753,532	2,324,561	
Ore milled - copper	tonnes	617,734	596,227	508,843	590,577	623,533	1,722,954	1,811,040	
COPPER									
COFFER									
Ore mined - grade	%	2.5	2.1	2.2	2.0	2.5	2.2	2.5	
Ore milled - grade	%	3.4	3.2	2.7	2.9	3.1	2.9	3.5	
Recovery	%	97.1	96.8	96.3	95.3	96.4	96.0	96.7	
Production									
Contained metal produced - cathode	tonnes	20,691	18,463	12,539	16,463	18,495	47,497	61,247	
Sales									
Total product sold - cathode	tonnes	20,525	18,313	11,800	15,639	17,804	45,243	61,326	
Payable metal in product sold - cathode	tonnes	20,525	18,313	11,800	15,639	17,804	45,243	61,326	

				ROSEBER				
				UARTER ENDE			YEAR-TO	
		SEP 2018	DEC 2018	MAR 2019	JUN 2019	SEP 2019	SEP 2019	SEP 2018
Ore mined	tonnes	260,810	264,224	250,004	248,537	257,342	755,883	752,866
Ore milled	tonnes	265,670	259,307	259,833	251,282	256,572	767,687	768,927
ZINC								
Ore mined - grade	%	8.0	9.1	9.0	9.5	9.8	9.5	8.6
Ore milled - grade	%	8.5	8.3	8.4	9.9	9.6	9.3	8.8
Recovery	%	85.3	85.3	84.4	84.7	87.0	85.4	84.5
Production								
Zinc concentrate	tonnes	35,663	33,980	34,132	39,032	39,859	113,023	105,923
Grade	%	53.9	54.3	54.2	54.0	53.5	53.9	54.1
Containing	tonnes	19,218	18,444	18,486	21,079	21,332	60,896	57,277
Sales								
Total product sold	tonnes	38,352	26,959	37,931	37,968	39,501	115,400	115,864
Payable metal in product sold	tonnes	18,143	12,517	17,705	17,750	18,014	53,469	55,414
LEAD								
Ore mined - grade	%	2.9	3.3	3.1	3.0	3.3	3.1	3.5
Ore milled - grade	%	3.2	3.1	3.0	3.1	3.0	3.0	3.7
Recovery	%	73.8	75.7	76.2	79.0	72.7	76.0	79.7
Production								
Lead concentrate	tonnes	10,750	9,906	9,392	10,261	9,344	28,997	37,524
Grade	%	58.8	61.6	62.9	60.3	60.4	61.2	60.3
Containing	tonnes	6,326	6,107	5,910	6,186	5,640	17,736	22,637
Sales								
Total product sold	tonnes	12,363	6,732	7,245	11,925	10,694	29,864	40,480
Payable metal in product sold	tonnes	7,138	3,901	4,198	7,112	6,081	17,392	23,480

				ROSEBERY (co. UARTER ENDE			YEAR-TO	O-DATE
		SEP 2018	DEC 2018	MAR 2019	JUN 2019	SEP 2019	SEP 2019	SEP 2018
Ore mined	tonnes	260,810	264,224	250,004	248,537	257,342	755,883	752,866
Ore milled	tonnes	265,670	259,307	259,833	251,282	256,572	767,687	768,927
COPPER								
Ore mined - grade	%	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Ore milled - grade	%	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Recovery	%	50.1	64.6	62.4	57.5	62.5	60.9	57.5
Production								
Copper concentrate	tonnes	1,804	2,356	2,223	1,954	2,381	6,557	6,124
Grade	%	16.1	17.4	17.0	16.5	15.9	16.4	17.2
Containing	tonnes	291	409	378	322	378	1,079	1,056
Sales								
Total product sold	tonnes	1,815	2,089	2,649	1,721	2,498	6,868	6,091
Payable metal in product sold	tonnes	290	327	430	287	402	1,119	1,024
OTHER METALS								
Ore mined - gold	g/t	1.3	1.4	1.4	1.2	1.2	1.3	1.5
Ore milled - silver	g/t	130.0	113.1	101.6	104.3	95.2	100.3	136.8
Recovery - gold	%	27.6	20.6	27.2	21.0	21.4	24.4	28.8
Production								
Gold doré	OZ	5,047	4,357	5,462	3,702	3,650	12,814	17,174
Containing - gold	OZ	3,018	2,559	3,314	2,166	2,171	7,651	10,409
Containing - silver	OZ	1,755	1,454	1,842	1,296	1,202	4,340	5,789
Sales								
Gold doré sold	OZ	4,758	3,388	5,679	3,023	4,088	12,790	18,129
Payable metal in product sold - gold	OZ	3,021	2,163	3,642	1,884	2,656	8,183	20,081
Payable metal in product sold - silver	OZ	782,290	482,876	544,262	612,630	555,198	1,712,090	2,435,927

# **APPENDIX – EXPLORATION**

### JORC 2012 TABLE 1 – LAS BAMBAS EXPLORATION ACTIVITIES

The following information provided in Table 1 complies with the 2012 JORC Code requirements specified by "Table-1 Section 1-3" of the Code.

Table 1 JORC 2012 Code Table 1 Assessment and Reporting Criteria for Las Bambas Exploration Activity

Assessment Criteria	Commentary
Section 1 Sampling Te	chniques and Data
Sampling techniques	Diamond drilling (DD) was used to obtain an average 2m sample that is half core split, crushed and pulverised to produce a pulp (95% passing 105µm). Diamond core is selected, marked and numbered for sampling by the logging geologist. Sample details are stored in a Geobank database for correlation with returned geochemical assay results.
	Samples for analysis are bagged, shuffled, re-numbered and de-identified prior to dispatch.
	Core samples were cut and sampled at an ALS sample preparation laboratory on-site. Samples are then sent to ALS Lima for preparation and analysis.
	There are no inherent sampling problems recognised.
	Measures taken to ensure sample representivity include the collection, and analysis of coarse crush duplicates.
Drilling techniques	The drilling type is wireline diamond core drilling from surface. Drill core is not oriented.
Drill sample recovery	Recovery is estimated by measuring the recovered core within a drill run length and recorded in the Geobank database. Run by run recovery has been recorded for all 6,226.20 m drilled to date at Chalcobamba Southwest with a recovery of 98.9%. Of diamond drilling in the data used for Mineral Resources estimation for the Sulfobamba, Chalcobamba and Ferrobamba deposits. Diamond drill recovery average is about 97% for all deposits (98% for Sulfobamba, 97% for Chalcobamba and Ferrobamba deposits).
	The drilling process is controlled by the drill crew and geological supervision provides a means for maximising sample recovery and ensures suitable core presentation. No other measures are taken to maximise core recovery.
	There is no detectable correlation between recovery and grade which can be determined from graphical and statistical analysis. Preferential loss/gains of fine or coarse materials are not significant and do not result in sample bias as the nature of mineralisation is stock-work veins and disseminated sulphides. Diamond core sampling is applied, and recovery is considered high.
Logging	100% of diamond drill core has been geologically and geotechnically logged.
	Geological logging is qualitative and geotechnical logging is quantitative. All drill core is photographed.
Sub-sampling techniques and sample preparation	All samples are from diamond drill core. Drill core is longitudinally sawn to provide half-core samples within intervals directed by the logging geologist. The remaining half-core is kept and stored in the original sample tray. The standard sampling length is 2m for PQ core (minimum 1.2m) and HQ core (minimum 1.2m, maximum 2.2m) while NQ core is sampled at 2.5m (minimum 1.5m). Sample intervals do not cross geological boundaries.
	Geological samples have been processed in the following manner: Dried, crushed, pulverised to 95% passing 105µm.  Sizing analyses are carried out on one in 10-15 samples.
	Representivity of samples is checked by duplication at the crush stage in one in every 40 samples. No field duplicates are taken.
	12-month rolling Quality Assurance / Quality Control (QAQC) analysis of sample preparation techniques indicate the process is appropriate for Las Bambas samples.

# Section 1 Sampling Techniques and Data The sample types, nature, quality and sample preparation techniques are considered appropriate for the style of the Las Bambas mineralisation (porphyry and skarn Cu-Mo mineralisation) by the Competent Person. Routine assay methods undertaken by ALS (Lima) for Las Bambas are as follows: Quality of assay data and laboratory tests Cu, Ag, Pb, Zn, Mo - 0.5g of sample. Digestion by 4-Acids. Reading by Atomic Absorption Spectrometry (AAS). Acid soluble copper - 0.5g sample. Leaching by a 5% solution of H2SO4 at ambient temperature for 1 hour. Reading by AAS. Au - Fire assay with AAS Finish. Over-range results are re-assayed by Gravimetric Finish. 35 elements - Digestion by aqua-regia and reading by ICP. All the above methods with the exception of the acid soluble copper are considered total digest. No geophysical tools, spectrometers or handheld XRF instruments have been used in the analysis of samples external to the ALS laboratory for the estimation of Mineral Resources. For the 2018 and 2019 programmes, duplicated samples were collected at the time of sampling and securely stored. Samples for the 2018 were then sent to the Inspectorate Laboratory, Lima, for third party (umpire) analysis. The 2019 samples are in process. The samples were selected at a rate of 1:40. Results received indicate a good correlation between datasets and show no bias for copper, molybdenum, silver and gold. ALS release monthly QAQC data to Las Bambas for analysis of internal laboratory standard performance. The performance of the laboratory internal standards is within acceptable limits. Las Bambas routinely insert: Primary coarse duplicates: Inserted at a rate of 1:40 samples. Coarse blank samples: Inserted after a high-grade sample (coarse blank samples currently make up about 4.2% of all samples analysed). Pulp duplicates samples: Inserted 1:40 samples. Pulp blank samples are inserted before the coarse blank sample and always after a high-grade sample (pulp blank samples currently make up about 4.2% of all samples analysed). QAQC analysis has shown that for: Blanks: a minimum level of sample contamination by copper was detected during the sample preparation and Duplicates: the analytical precision is within acceptable ranges when compared to the original sample, i.e., more than 90% of the pairs of samples are within the error limits evaluated for a maximum relative error of 10% (R2>0.90). These results were also repeated in the external ALS check samples. Certified Reference Material: acceptable levels of accuracy and precision have been established. Sizing test results are not routinely analysed. Verification of Verification by independent personnel was not undertaken at the time of drilling. However, drilling, core logging and sampling and sampling data is entered by geologists; assay results are entered by the resource geologist after data is checked for assaying outliers, sample swaps, performance of duplicates, blanks and standards, and significant intersections are checked against core log entries and core photos. Errors are rectified before data is entered into the database.

**Assessment Criteria** 

Commentary

Assessment Criteria	Commentary
Section 1 Sampling Tec	chniques and Data
	No twinned drillholes have been completed.
	All drillholes are logged using laptop computers directly into the drillhole database (Geobank). All laboratory primary data and certificates are stored on the Las Bambas server.
	The database has internal validation processes which prevent invalid or unapproved records from being stored.  Additional manual data validation occurs in Vulcan software before data is used.
	No adjustments have been made to assay data.
Location of data	Drillholes are set out using UTM co-ordinates with a hand held Differential Global Positioning System (DGPS) and are
points	accurate to within 1m. On completion of drilling, collar locations are picked up by the onsite surveyors using DGPS (Trimble or Topcon). These collar locations are accurate to within 0.5m.
	All drillholes are surveyed using Reflex Gyro Sprint equipment. Measurements are taken every 25 to 50 meters during drilling itself and the entire hole is surveyed with continuous readings/measurements once the hole has been completed. The downhole surveys are considered accurate for Mineral Resources estimation work.
	The datum used is WGS 84 with a UTM coordinate system zone 19 South.
	In June 2018, DIMAP Pty. Ltd processed LiDAR for the area covered by Las Bambas mine site and its surroundings. The Lidar component of the flight was required to generate a point cloud with +7 pts/sqm minimum, with the core area covering the exploration site having a density of +12 pts/sqm. The maps delivered were drafted in UTM coordinates and the projections used were WGS 84. The Lidar surface from this survey is in current use at site and is considered suitable for Mineral Resources and Ore Reserves estimation purposes.
Data spacing and distribution	The scope of this report covers exploration stage drilling at Chalcobamba Southwest. Drill platforms are variably spaced though they are generally about 200m apart. Occasionally, platforms are separated by 100m or less. Multiple, angle holes may be drilled from a single platform and result in an average data spacing of less than 200m.
Sample security	Measures to provide sample security include:
	Adequately trained and supervised sampling personnel.
	Samples are stored in a locked compound with restricted access during preparation.
	Dispatch to various laboratories via contract transport provider in sealed containers.
	Receipt of samples acknowledged by receiving analytical laboratory by email and checked against expected submission list.
	Assay data returned separately in both spreadsheet and PDF formats.
Audit and reviews	No audits on these drilling results have been completed.
	Regular laboratory inspections are completed and documented by corporate exploration staff.

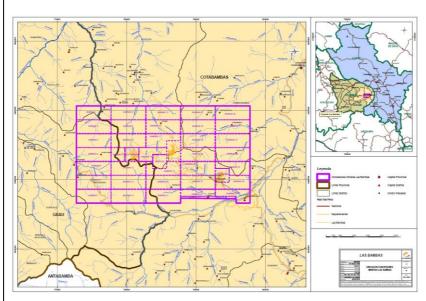
## Assessment Criteria

Commentary

#### Section 2 Reporting of Exploration Results

Mineral tenement and land tenure status The Las Bambas project has tenure over 41 Mineral Concessions. These Mineral Concessions secure the right to the minerals in the area, but do not provide rights to the surface land.

Property of surface land is acquired through a separate process. The below map outlines the 41 Mineral Concessions and the mine property owned by MMG.



Tenure over the 41 Concessions is in good standing. There are no known impediments to operating in the area.

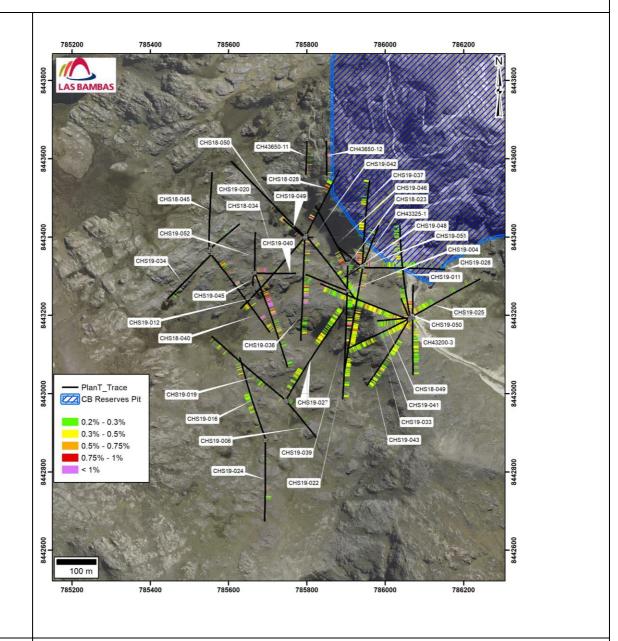
Criteria	Commentary							
		m 1:						
ection 2 Reporting	of Exploration	Results						
Exploration done	Company	Year	Deposit	Purpose	Type	# of DDH	Drill size	Metres Drilled
by other parties	Cerro de	1996	Chalcobamba	Exploration		6		906.4
	Pasco Cyprus	1996	Chalcobamba	Exploration	DDH	9	Unknown	1,367.30
	Phelps		Ferrobamba			4		737.8
	Dodge	1997	Chalcobamba	Exploration	DDH	4	Unknown	653.4
		1007	Ferrobamba	Front and an	0011	3	Unline	365.8
	ВНР	1997	Chalcobamba	Exploration	DDH	4	Unknown	658.6
	Pro Invest	2003	Ferrobamba	Exploration	DDH	4	HQ	738
	Pro invest	2005	Chalcobamba	Exploration	חטח	7	пц	1,590.00
			Ferrobamba			109		26,839.90
		2005	Chalcobamba	Resource Evaluation	DDH	66	HQ	14,754.10
			Sulfobamba			60		13,943.00
			Ferrobamba			125		51,004.20
	Xstrata		Chalcobamba			95	HQ	27,982.90
		2006	Sulfobamba	Resource Evaluation	DDH	60		16,971.50
			Charcas			8		2,614.10
			Azuljaja			4		1,968.90
			Ferrobamba			131		46,710.40
		2007	Chalcobamba	Resource Evaluation	DDH	134	HQ	36,617.60
			Sulfobamba			22		4,996.60
		2008	Ferrobamba	Resource Evaluation	DDH	118	HQ	46,773.80
			Chalcobamba	resource Evaluation		90	110	22,096.60
		2010	Ferrobamba	Resource Evaluation	DDH	91	HQ	28,399.90
		2014	Ferrobamba	Resource Evaluation	DDH	23	HQ	12,609.70
			Huancarane	Sterilisation	DDH	3	HQ	1,265.60
		2015	Huancarane	Sterilisation	DDH	5	HQ	772.60
		2015	Ferrobamba	Resource Evaluation	DDH	154	HQ	53,771.70
		2016	Ferrobamba	Resource Evaluation	DDH	104	HQ	29,408.40
		2017	Chalcobamba	Resource Evaluation	DDH	13	110	1,880.30
	N 4N 4 C	2017	Ferrobamba	Resource Evaluation	DDH	44	HQ	20,211.35
	MMG	2015	Ferrobamba	Resource Evaluation	DDH	83	HQ-NQ- BQ	48,062.70
		2018	Chalcobamba	Resource Evaluation	DDH	46	HQ	7,278.60
			Chalcobamba SW	Exploration	DDH	7	HQ	3,459.50
			Ferrobamba	Resource Evaluation	DDH	72	HQ-NQ-	23,401.05
		2019	Chalcohamba	Posourco Fundantion	חחו	08	BQ	1 710 00
	<u> </u>	<u> </u>	CHAICODAITIDA SVV		PUH		пŲ	
eology	Lac Rambac :	s located :	n a helt of Cu (Ma Au)		ad with no		vetame citue	
	Peru. This me	s located i	belt is controlled by t	Resource Evaluation Exploration Total ) skarn deposits associate he Andahuaylas-Yauri Ba	tholith of	Eocene- Olig	ocene age, w	hich is empla

Assessment Criteria	Commentary	Commentary								
Section 2 Reporti	ng of Exploration Resul	ts								
Drillhole	HOLEID	EASTING	NORTHING	ELEV	AZIMUTH	INCLINATION	TD			
Information	CH43200-2	786,070	8,443,199	4,464	0.3	-59.3	153.3			
in on idea	CH43200-3	786,070	8,443,193	4,464	180	-53.3	253.5			
	CH43325-1	785,943	8,443,325	4,502	20	-59.3	211.3			
	CH43650-11	785,800	8,443,649	4,514	180	-59.2	181.8			
	CH43650-12	785,850	8,443,650	4,530	180	-69.9	273.3			
	CHS18-023	785,797	8,443,403	4,458	138.7	-65.6	500.8			
	CHS18-028	785,798	8,443,404	4,459	24.9	-65.5	413.6			
	CHS18-034	785,797	8,443,403	4,458	218.7	-65.2	600			
		785,548	8,443,364	4,430	140.2	-60.4	497.1			
	CHS18-040 CHS18-045	785,550	8,443,363	4,430	0.7	-59.9	400.4			
	CHS18-049	786,063	8,443,189	4,465	290	-60.6	502.6			
			, ,				_			
	CHS18-050	785,797 785,905	8,443,399	4,458	315.5 290	-60.5 -75	545 64.7			
	CHS19-003 CHS19-004	785,905	8,443,263 8,443,262	4,501 4,501	290	-75 -75.1	450			
	CHS19-004	785,749	8,442,979	4,436	138.9	-64.9	286.6			
	CHS19-006	786,064	8,443,194	4,464	348.2	-64.9 -65.1	529.6			
	CHS19-011			_	159.7		529.6			
		785,668	8,443,308	4,443		-60.4				
	CHS19-016	785,695	8,442,881	4,435	340	-65.5	500			
	CHS19-019	785,746	8,442,983	4,435	309.59	-60.38	500			
	CHS19-020	785,553	8,443,371	4,429	50	-65	231.5			
	CHS19-022	785,943	8,443,325	4,502	190	-60	550.6			
	CHS19-024	785,694	8,442,880	4,447	179.25	-59.68	398.2			
	CHS19-025	786,063	8,443,194	4,465	59.96	-59.89	400			
	CHS19-027	785,746	8,442,983	4,435	29.51	-60.45	519			
	CHS19-028	785,944	8,443,322	4,502	90.4	-60.06	400			
	CHS19-033	786,063	8,443,195	4,465	210.16	-59.92	400			
	CHS19-034	785,558	8,443,358	4,429	224.09	-60.31	314.5			
	CHS19-036	785,795	8,443,396	4,458	182.28	-55.58	450			
	CHS19-037	785,942	8,443,324	4,502	359.67	-60.47	444.8			
	CHS19-039	785,904	8,443,332	4,486	180	-50	523.8			
	CHS19-040	785,667	8,443,307	4,442	89.87	-74.81	400.3			
	CHS19-041	786,063	8,443,194	4,465	265.65	-79.04 75.24	449.7			
	CHS19-042	785,796	8,443,401	4,458	94.94	-75.24	81.65			
	CHS19-043	786,064	8,443,193	4,464	244.06	-69.23	470.7			
	CHS19-045	785,666	8,443,307	4,442	200.31	-85.11	359.5			
	CHS19-046	785,903	8,443,332	4,486	330.34	-64.91	388.9			
	CHS19-048	785,940	8,443,325	4,502	236.43	-80.4	300			
	CHS19-049	785,794	8,443,399	4,458	310.08	-79.3	408.4			
	CHS19-050	786,063	8,443,190	4,464	334.79	-82.12	420.4			
				_	-					
		•	•		•					
Data aggregation methods	CHS19-051 CHS19-052 Downhole sample it tool searches for in 20m. 20m downhole No metal equivaler	CHS19-051 785,943 8,443,322 4,502 310 -79 457.2								
Relationship between mineralisation width and intercepts length	true thicknesses are	No metal equivalents were used for intersection reporting.  In the Chalcobamba Southwest Zone mineralisation, the geometry of the geology is not well understood yet and therefore the true thicknesses are uncertain at this stage.  All intervals reported are downhole widths.								

Assessment Commentary
Criteria

Section 2 Reporting of Exploration Results

#### Diagrams



Balanced reporting

The complete list of drillhole interval assays in the Chalcobamba Southwest mineralisation zone are provided with this press release.

Other substantive exploration data

Over the past 3 years, several orebody knowledge studies have been carried out including skarn zonation, vein densities and a large age dating program. Results from these studies are assisting with improving the understanding of the orebodies. Studies on clay and talc mapping are also ongoing.

Ground gravity, IP and magnetometry are performed routinely on all exploration projects. Aerial magnetometry, radiometric and EM surveys have been flown.

Surface mapping, rock chip sampling and soil grid geochemistry are performed routinely on all exploration projects.

Assessment	Commentary
Criteria	
Section 3 Estimation	n and Reporting of Mineral Resources
Database integrity	The following measures are in place to ensure database integrity:
	<ul> <li>All Las Bambas drillhole data is stored in an SQL database (Geobank) on the Las Bambas site server, which is regularly backed-up.</li> </ul>
	The entire database was migrated from acQuire to Geobank in 2019
	<ul> <li>Geological logging is entered directly into laptop computers which are uploaded to the database. Prior to November 2014, diamond drillholes were logged on paper logging forms and transcribed into the database. From November 2015 logging was entered directly into a customised interface using portable tablet computers.</li> </ul>
	Assays are loaded directly into the database from digital files provided from the assay laboratory.
	The measures described above ensure that transcription or data entry errors are minimised.
	Data validation procedures include:
	<ul> <li>A database validation project was undertaken in early 2015 checking 5% of the assayed samples in the database against original laboratory certificates. No material issues were identified.</li> </ul>
	The database has internal validation processes which prevent invalid or unapproved records to be stored.
Site visits	The Competent Person has undertaken numerous site visits to Las Bambas since acquisition. In the view of the Competent Person there are no material risks to the Mineral Resources based on observations of site practices.
	Several site visits to the Ferrobamba area and the Chalcobamba area have been conducted but due to local community restrictions, the Competent Person has been unable to visit Sulfobamba to date.
Geological interpretation	<ul> <li>Initial resource definition drilling at the Chalcobamba Southwest Zone continues with associated geological sectional interpretations currently in progress.</li> <li>Significant drill intercepts &gt; 1.0% Cu are associated with limestone-hosted skarn alteration; whereas lower grade mineralization is hosted by porphyry style alteration.</li> <li>3-D modelling will commence once the 2019 drill program has been completed.</li> </ul>
	The factors affecting continuity both of grade and geology.
Dimensions	The surface projection of the drill intercepts reported here and located along the SW margin of the Chalcobamba pit (Table 2 - below) measures roughly 400 meters in a NE direction and 600 meters in a NW/SE direction.
Estimation and modelling techniques	Not applicable as no Mineral Resource is being reported at this time.
Moisture	Not applicable as no Mineral Resource is being reported at this time.
Cut-off parameters	A cut-off grade of 0.2% Cu was applied to the intersections reported. The basis for this cut-off is that it approximates the average cut-off grade for the Mineral Resource reported at the other Las Bambas deposits.
Mining factors or assumptions	No specific mining factors have been applied to this deposit, however it is expected that similar methods planned for the mining of Chalcobamba would be equally applied to this area.
Metallurgical factors or assumptions	Sulphide and partially oxidised material is included in the Mineral Resources which is expected to be converted to Ore Reserves and treated in the onsite concentrator facilities.

#### No other metallurgical factors have been applied to the Mineral Resources. Environmental Environmental factors are considered in the Las Bambas life of asset work, which is updated annually and includes provision factors or for mine closure assumptions Geochemical characterisation undertaken in 2007, 2009 and 2017 indicate most of the waste rock from Ferrobamba and Chalcobamba deposits to be Non-Acid Forming (NAF) and that no acid rock drainage from the waste rock dumps from these two pits should be expected. Waste rock samples from Sulfobamba were found to contain higher concentrations of sulphur and that 30% to 40% of waste rock could be Potentially Acid Forming (PAF). Suitable controls will be implemented for all PAF waste rock, including investigating opportunities for backfill into pit voids. It is expected that there will be no material difference in the character of material from this area to Chalcobamba overall. Additional geochemical characterisation work is required. Tailings generated from processing of Ferrobamba and Chalcobamba were determined to be NAF. Geochemical characterisation of tailings generated from processing of Sulfobamba ores is currently under assessment, however for environmental assessment purposes it was assumed to have PAF behaviour. Current Life of Asset schedules have Ferrobamba tailings processing scheduled for several years after Sulfobamba tailings are processed. A closure plan was submitted and approved by the regulator in 2016 and describes the encapsulation method for Sulfobamba tailings. Based on the current TSF design and the design assumptions for dry settled density and beach angle, the TSF at Las Bambas has a final capacity of 784Mt of tailings from processing 800Mt. Three studies have been conducted looking at increasing tailings storage capacity at Las Bambas: Tailings characterisation test work to assess final settled density and beach slope in current TSF. Options assessment to increase capacity at TSF currently under construction. Pre-feasibility study for an additional TSF. Bulk density Bulk density is determined using the Archimedes' principle (weight in air and weight in water method). Samples of 20cm in length are measured at a frequency of approximately one per core tray and based on geological domains. The density measurements are considered representative of each lithology domain. Bulk density measurement occurs at the external, independent assay laboratory. The core is air dried and whole core is wax coated prior to bulk density determination to ensure that void spaces are accounted for. Density values in the Mineral Resources models are estimated using Ordinary Kriging within the lithology domain shapes. Unestimated blocks were assigned a density value based on an expected value of un-mineralised rock within each geological Classification Not applicable as no Mineral Resource is being reported at this time. Audits or reviews No audits or reviews have been undertaken on Chalcobamba SW Discussion of There is high geological confidence of the spatial location, continuity and estimated grades of the modelled lithologies within relative accuracy / this deposit. Minor, local variations are expected to occur on a sub-25m scale that is not detectable by the current drill confidence spacing. Global declustered statistics of the composite databases on a domain basis were compared against the block model. Block model estimates were within 10% of the composite database. Local swath plots were undertaken for each deposit. All plots showed appropriate smoothing of composite samples with respect to estimated block grades.

 ${\sf Table\ 2-Summary\ of\ Significant\ Downhole\ Intercepts,\ Las\ Bambas,\ Chalcobamba\ Southwest\ Zone}$ 

Note: NSI = no significant intersection

Hole ID	From (m)	To (m)	Length (m)	Cu (%)	Au (g/t)	Mo ppm	Ag (g/t)
CH43200-2	2.5	72.1	69.6	0.49	0.02	172	1.1
CH43200-3	46	77.5	31.5	0.26	0.03	184	0.8
	83.2	196	112.8	0.24	0.02	136	0.6
CH43325-1	12.4	59.4	47	0.75	0.03	7	3.5
CH43650-11	147.5	167.5	20	0.55	0.02	88	1.7
CH43650-12	11	42.9	31.9	0.46	0.02	5	2
	106.9	141.3	34.4	1.47	0.07	10	6.9
	160.8	181.1	20.4	0.46	0.02	14	2.1
CHS18-023	46.2	90.6	44.4	1.21	0.05	20	3.5
	301	321	20	0.27	0.01	291	0.9
	354.5	382.8	28.3	0.29	0.01	304	0.8
	397.7	435.1	37.4	0.26	0.01	228	0.7
	454.6	492	37.4	0.23	0.01	246	0.6
CHS18-028	99.5	119.7	20.2	0.82	0.04	18	4
	278.2	338.5	60.3	0.31	0.01	89	1.2
CHS18-034	34.7	54.7	20	0.22	0.01	8	0.7
	82.6	102.8	20.2	0.22	0.01	21	0.7
	381.5	401.5	20	0.51	0.01	4	1.2
	535.6	571.3	35.7	0.46	0.01	164	1.9
CHS18-040	83.5	116.7	33.2	0.38	0.02	8	1.4
	133.1	153.1	20	0.25	0.03	127	1.1
	206.9	226.9	20	1.2	0.06	26	4.4
	411.7	439.9	28.3	0.91	0.05	72	3.4
	461.9	497.1	35.2	0.27	0.01	417	1.3
CHS18-045				NSI			
CHS18-049	0.9	382.1	381.2	0.37	0.01	263	1
	397.5	423.9	26.4	0.23	0.01	141	0.6
	426.1	472.3	46.2	0.28	0.01	225	0.7
CHS18-050	30.9	50.9	20	0.47	0.05	6	1.7
	86.4	106.4	20	0.21	0.01	4	1.2
	122.8	156.7	33.9	0.66	0.02	12	2.1
CHS19-003				NSI			
CHS19-004	20	41	21	0.8	0.04	24	3.4
	48	68	20	0.27	0.01	5	1.1
	128	148	20	0.42	0.02	9	1.5
	201	260.5	59.5	1.01	0.06	17	3.9
	278	298	20	0.23	0.01	289	0.8
CHS19-006				NSI			
CHS19-011	0	35.7	35.7	0.44	0.02	125	1.1
	49.9	153	103.1	0.54	0.02	299	1.5
	259	279	20	0.25	0.01	116	0.8
	289.5	309.5	20	0.23	0.01	86	0.7
	333.8	371	37.2	0.25	0.01	77	0.5
	391	411	20	0.26	0.01	78	0.5
	423	447	24	0.38	0.01	63	0.7
	463	490	27	0.23	0.01	67	0.5
CHS19-012	24.8	44.8	20	0.38	0.02	144	1.2
	107	233.8	126.8	1.39	0.04	7	4.7
	282	325.7	43.7	0.34	0.01	560	1.8
CHS19-016				NSI			
CHS19-019	23	33.2	10.2	0.21	0.01	6.76	2.28
	147	161	14	0.24	0.01	78.29	1.33
	388.3	400	11.7	0.2	0.01	41.9	0.7
	422	442	20	0.28	0.02	260.5	1.13
CHS19-020				NSI			
CHS19-022	37.35	58.85	21.5	0.63	0.05	18.62	3.13

Hole ID	From (m)	To (m)	Length (m)	Cu (%)	Au (g/t)	Mo ppm	Ag (g/t)
	180.4	200.1	19.7	0.2	0.01	264.1	0.61
	246	275	29	0.3	0.01	535.9	1.52
	292.2	429.5	137.3	0.4	0.02	278	1.38
	496	514	18	0.24	0.01	245.44	0.57
CHS19-024	272	290	18	0.36	0.01	154.2	2.44
CHS19-025	0.4	24	23.6	0.77	0.02	263.44	2.23
	31	49.5	18.5	0.44	0.01	52.66	1.14
	57	115	58	0.29	0.01	308.03	0.76
	131	141	10	0.21	0.01	43.4	0.66
CHS19-027	121	173.8	52.8	0.33	0.02	246.22	2.27
	316.95	424	107.05	0.3	0.01	147.71	1.1
	430	476	46	0.27	0.01	316.7	0.57
	485.9	512	26.1	0.28	0.01	248.28	0.42
CHS19-028	23	52	29	1.38	0.12	2.67	6.12
	94.25	100	5.75	0.4	0.02	464.24	3.56
	114	135	21	0.23	0.01	162.96	0.7
	141	159.6	18.6	0.26	0.01	210.52	1.1
	180	190	10	0.23	0.01	57.2	0.67
	196	206	10	0.21	0.01	88.6	0.49
	212	241	29	0.25	0.01	69.88	0.77
	247	256	9	0.22	0.01	111.56	0.68
	268	274	6	0.13	0.01	24	0.34
	328	344	16	0.15	0.01	39.38	0.6
CHS19-033	0	18	18	0.33	0.01	29.98	0.86
	41	55	14	0.7	0.03	66.03	3.38
	72.2	77.35	5.15	0.9	0.06	985.2	12.02
	128.2	207.1	78.9	0.31	0.01	202.4	0.89
	235.4	240	4.6	0.19	0.01	44.78	0.61
	258	300	42	0.31	0.01	189.73	1
	344	356	12	0.31	0.01	88	0.84
	364	398	34	0.27	0.01	165.71	0.62
CHS19-034				NSI	_		
CHS19-036	60	70	10	0.98	0.04	4.8	4.64
	163.55	169	5.45	0.22	0.01	13.25	0.7
	191	197.5	6.5	0.18	0.01	73.28	0.52
	210	254	44	0.98	0.07	2.68	4.38
	264.4	286	21.6	1.29	0.06	7.99	5.48
	355.75	377	21.25	0.21	0.01	222.84	0.97
	399	407	8	0.21	0.01	200.25	1.13
CHS19-037	6.2	61.9	55.7	0.7	0.04	9.85	4.31
	103	110	7	0.06	0.01	535.35	0.25
	188	229	41	0.34	0.01	214.59	0.77
	317.8	348.25	30.45	0.36	0.01	300.63	0.73
	423	444.8	21.8	0.27	0.01	110.67	0.63
CHS19-039	118.95	125	6.05	0.38	0.02	4.99	1.27
	144.3	169	24.7	0.29	0.01	19.62	1.12
	232.1	254	21.9	0.81	0.05	191.08	3.76
	293.95	300	6.05	0.44	0.02	389.13	1.64
	366.7	397	30.3	0.38	0.01	261.77	1.27
	410	436	26	0.32	0.01	136.18	1.05
	456	477	21	0.24	0.01	109.1	1.14
CLICAD D : :	505.6	523.75	18.15	0.3	0.01	290.57	1.13
CHS19-040	26.75	42.3	15.55	1.02	0.04	36.96	3.21
	55.8	117	61.2	1.26	0.04	2.43	3.67
	212	230	18	0.78	0.04	16.37	2.2
CHS19-041	0.9	176	175.1	0.54	0.02	453.07	2.03
	196	216	20	0.33	0.02	588	1.51
	238	277.95	39.95	0.24	0.01	97.62	0.41
	299	438.55	139.55	0.24	0.01	198.23	0.65

Hole ID	From (m)	To (m)	Length (m)	Cu (%)	Au (g/t)	Mo ppm	Ag (g/t)		
CHS19-043	0	198.5	198.5	0.42	0.01	326.16	1.25		
	275.2	426	150.8	0.28	0.01	195.57	0.79		
	448	464	16	0.23	0.01	257.25	0.49		
CHS19-045	39	147	108	1	0.03	4.09	3.35		
	162	173	11	0.21	0.01	39.75	0.53		
	184.5	192	7.5	0.38	0.01	1.24	1.35		
CHS19-046	22	43	21	0.55	0.04	4.03	2.15		
	60	74	14	0.59	0.02	3.26	1.74		
	84	93	9	0.56	0.02	173.36	2.05		
CHS19-048	12	36	24	0.37	0.02	8.83	1.76		
	41.2	72	30.8	0.4	0.03	7.05	1.84		
CHS19-049		Assays Pending							
CHS19-050				Assays Pendir	ng				
CHS19-051				Assays Pendir	ng				
CHS19-052				Assays Pendir	ng				

#### Statement of Compliance with JORC Code Reporting Criteria and Consent to Release

This report has been compiled in accordance with the guidelines defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ("2012 JORC Code").

#### Competent Person Statement

I, Marcus Tomkinson, confirm that I am the Competent Person for the Exploration Results section of this Report and:

- I have read and understood the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition).
- I am a Competent Person as defined by the JORC Code, 2012 Edition, having five years' experience that is relevant to the style of mineralisation and type of deposit described in the Report, and to the activity for which I am accepting responsibility.
- I am a Member of The Australasian Institute of Mining and Metallurgy
- I have reviewed the relevant Exploration results sections of this Report to which this Consent Statement applies.

I am a full time employee of MMG Ltd. at the time of the estimation.

I have disclosed to the reporting company the full nature of the relationship between myself and the company, including any issue that could be perceived by investors as a conflict of interest.

I verify that the Exploration Results sections of this Report is based on and fairly and accurately reflects in the form and context in which it appears, the information in my supporting documentation relating to the Exploration Results.

Competent Person Consent

Pursuant to the requirements Clause 9 of the JORC Code 2012 Edition (Written Consent Statement)

With respect to the sections of this report for which I am responsible -I consent to the release of the Exploration results as presented in this report:

Name and Member Number

Marcus Tomkinson

AUSIMM Member 206648

Signature of Witness:

City of Residence

17 October 2019

Melbourne

BRENT WALSH - MELBOURNE

Witness Name and Residence: (e.g. town/suburb)