



#### ASX Release

31 January 2022

#### Magnum Mining and Exploration Limited

ABN 70 003 170 376

#### ASX Code

MGU

#### Executive Chairman

Don Carroll

#### Managing Director

Dano Chan

#### Non-Executive Directors

Matt Latimore

John Dinan

#### Company Secretary

John Dinan

#### Issued Shares

497,144,914

#### Listed Options

136,126,840

Exp 30/09/2022 @ \$0.05

#### Unlisted Securities (Options & Performance Rights)

118,500,500

#### Email

info@mmel.com.au

#### Website

www.mmel.com.au

Level 11

52 Phillip Street

Sydney NSW 2000

T +61 2 8316 3989

## Quarterly Activities Report for three months ending 31 December 2021

### HIGHLIGHTS

#### Buena Vista

- The focus for the Buena Vista Project is the near-term development of an integrated mining and production facility for low emission green pig iron products, for both the US domestic market and premium Asian steelmakers.
- Magnum's goal for the Buena Vista Project is to become the first green pig iron producer in North America and the only pig iron producer on the West Coast of the USA.
- Pig iron is a major ingredient in Electric Arc Furnace (EAF) steelmaking, which is growing rapidly in response to environmental restrictions on blast furnaces which use sinter and coke.
- Global long-term demand for pig iron is forecast to increase at an accelerated rate.
- The Buena Vista Project is to value add in-house iron ore into pig iron for supply to the US market where domestic prices are currently in excess of \$US550/tonne.
- Major US-based steel producers have committed to significant Electric Arc Furnace (EAF) capacity expansion (refer to ASX release dated 28 September 2021).
- The integrated development strategy allows Magnum to become a low-cost pig iron producer in rapidly growing USA markets.
- In addition to low emission price premiums, the Buena Vista Project will also benefit from US carbon credit and related tax incentives.
- Rising demand and projected continuance of limited supply for low emission green pig iron worldwide accentuates the significant potential of the Buena Vista Project.
- Confirming this potential, the Company successfully completed in the December quarter a green pig iron pilot plant test production using ore from the Buena Vista Project, with the successful test facilitating the preferred pig iron production process to be formalised.
- The Company also completed the Buena Vista Project mine schedule and initial pit design.

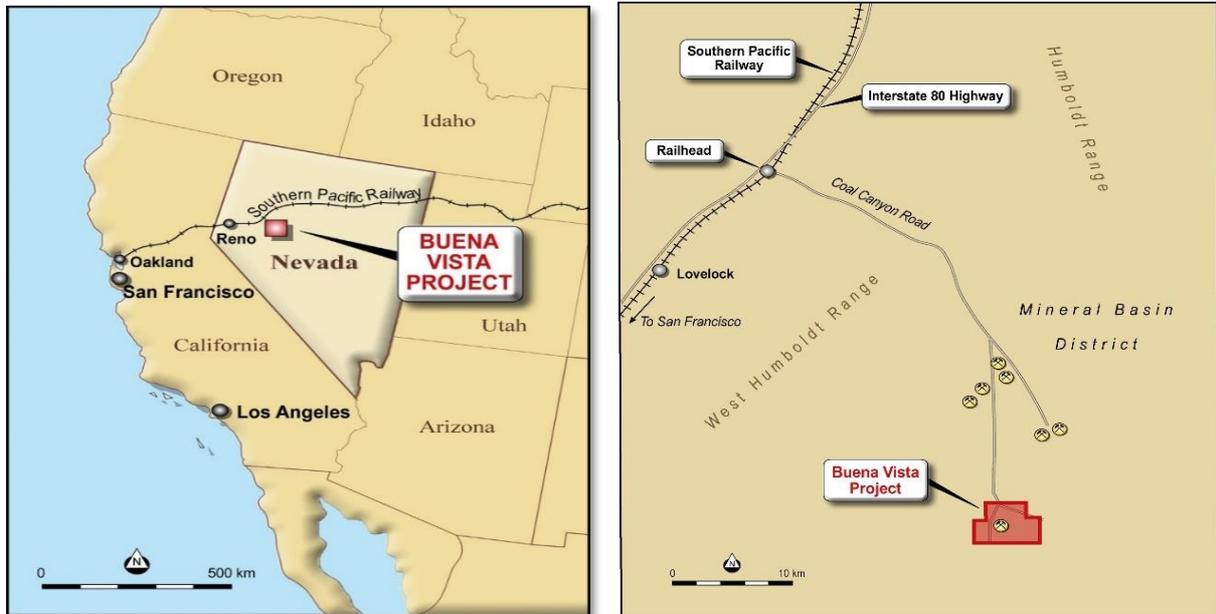
### CORPORATE

- Anglo American Agreement covering offtake and financing extended for additional twelve months (refer to ASX release dated 16 December 2021).
- US biomass/ biochar supplier selected and MoU signed (refer to ASX release dated 11 January 2022, released post the December 2021 quarter).

## DECEMBER QUARTER 2021 – SUMMARY OF ACTIVITIES

### 1.0 OVERVIEW

During the December 2021 quarter Magnum Mining & Exploration Limited (ASX: MGU) (Magnum or the Company) continued to make significant progress for the near-term development of the Company's Buena Vista magnetite project located in Nevada, USA (the Buena Vista Project or Buena Vista).



**Figure 1: Buena Vista location.**

The Board of Magnum is cognisant of price volatility in the iron ore market and growing demand for “green iron”, therefore the Board is targeting the development of the Buena Vista Project into an integrated steel raw material operation. By value adding premium quality Buena Vista iron ore into low emission (carbon neutral) pig iron products on site, the Board is confident that the Buena Vista Project can capture premium returns for the Company's shareholders.

The Company's integrated pig iron strategy coincides with the global push for a greener steel making industry. Currently the steel industry accounts for 9% of global greenhouse gas emissions and as a consequence Electric Arc Furnace (EAF) steel making technology is rapidly being accepted as the way forward for low emission steel production.

Pig iron is a major raw material for the EAF steel making process and with new EAF plants under construction, the planned global pig iron trade is expected to rise rapidly. For the transition into a carbon neutral economy and to meet emission restrictions, all major economies are competing for EAF raw materials. There are 30 million tonnes of new EAF production capacities planned in the USA alone.

The US steel market outperformed the rest of the world in 2021. Supported by a number of long-term policies and anti-dumping duties, the demand for quality steel in the USA is expect to last well into 2022. As such, there is an acute shortage in pig iron supply in North America.

The Company intends that the Buena Vista Project will become the only pig iron producer on the West Coast of the USA with the nearest competitor located in the state of Illinois, over 2,000 km away. Magnum's Buena Vista Project is surrounded by over 7 million tons of existing EAF

producers in the region. All such producers are seeking long term stable and quality pig iron supply.

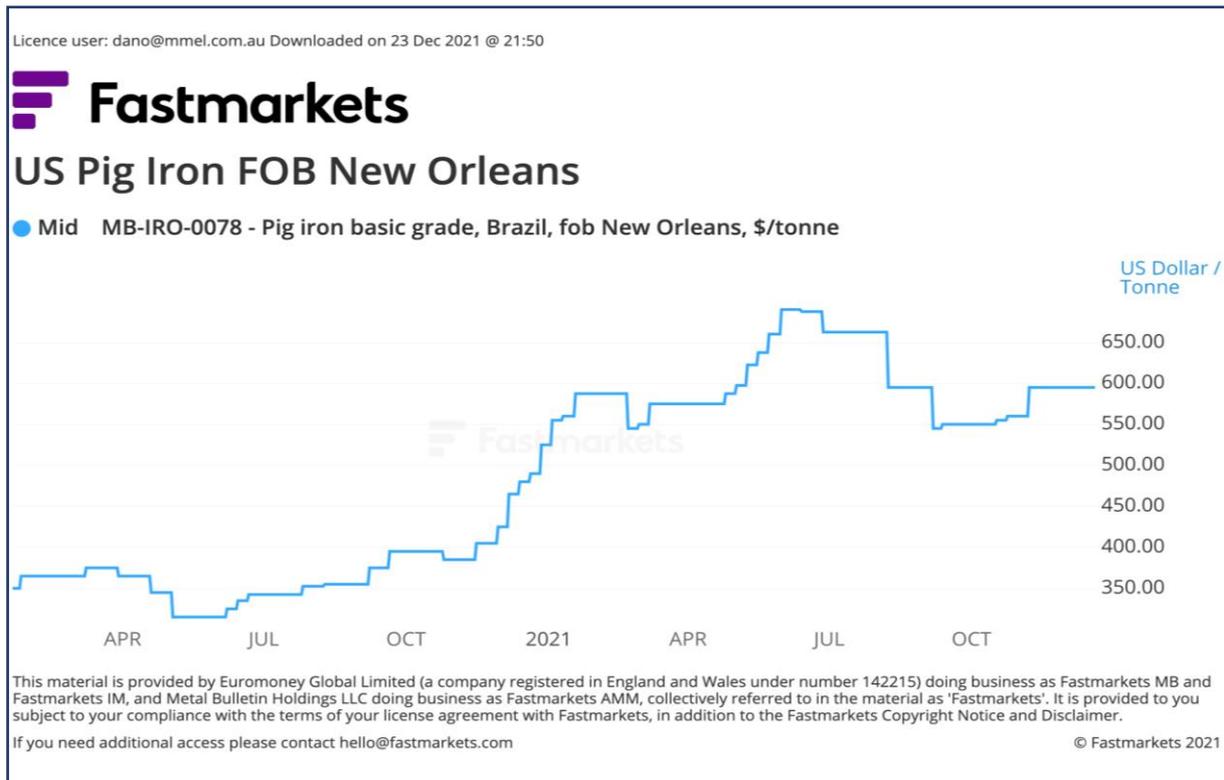


Figure 2: US pig iron import price ex New Orleans (2020-2021).

The key to the Buena Vista Project green iron strategy is to supply biomass for the production of biochar, which is used as a charge carbon and slag foaming agent in EAF steel production.

In this regard and as an added plus for Buena Vista, biomass in the form of waste wood from forest fire debris, the packing industry and agriculture is currently being transported from California to landfills in Nevada. The Buena Vista Project is therefore very well positioned to produce the required quality biochar for pig iron production at a very competitive cost.

Whilst the USA is yet to announce a federal carbon trading scheme, each US state is planning its own carbon credit and tax incentives. Given biochar is a renewable carbon source and the fact that raw materials for Buena Vista will be sourced locally, Buena Vista will have a minimum carbon footprint and the Company anticipates it will be eligible for the yet to be confirmed sizable carbon incentives.

The Buena Vista integrated strategy will make the Company the first green pig iron producer in North America. With easy access to ports in California, Magnum is set to extract added product premium for green pig iron supply to both domestic and international steel makers.

This is an exciting development strategy for Magnum and one that as the Company progresses will hopefully see the Buena Vista Project become a key US magnetite asset.

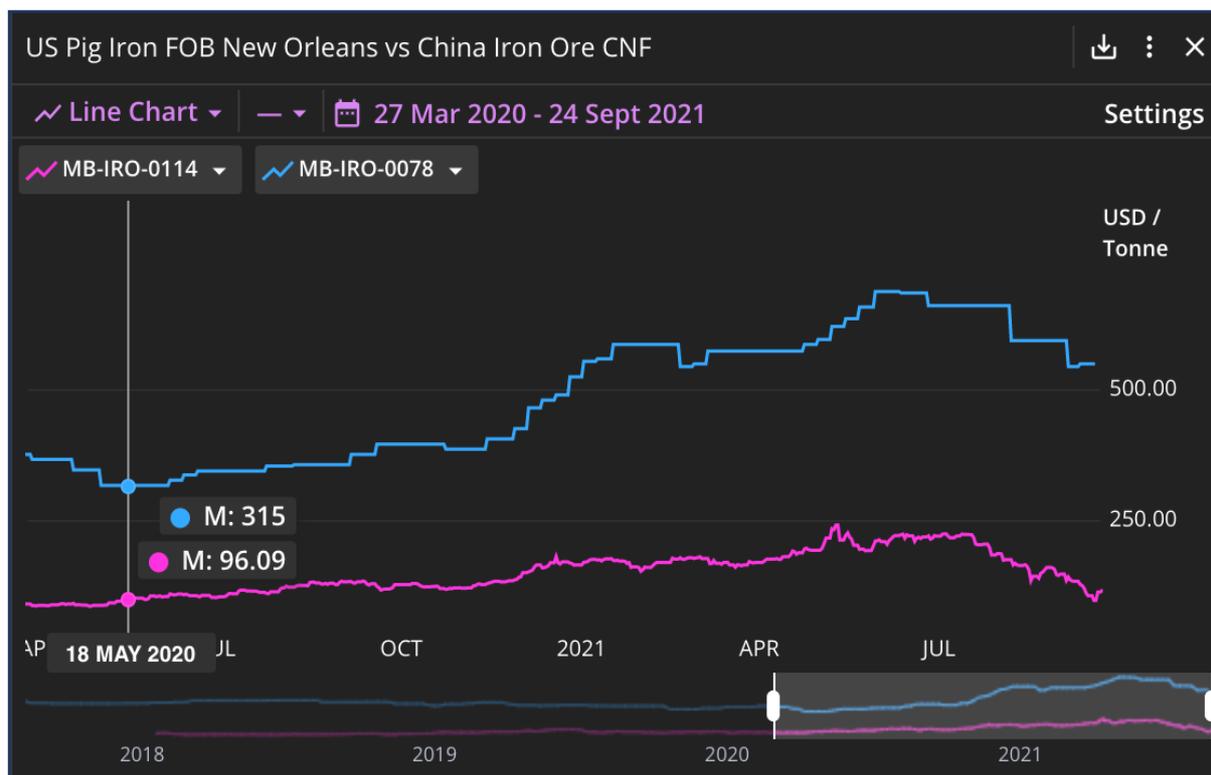


Figure 3: widening price gap between iron ore and pig iron (source: Fastmarket).

## 2.0 KEY DEVELOPMENT MILESTONES ALREADY ACHIEVED

- Buena Vista Project mine schedule and initial pit design completed.
- Purchase of strategic landholding at Colado completed for railway logistics hub proximal to the Buena Vista Project.
- Review of dry magnetic beneficiation plant design & product iron ore quality completed.
- Successful green pig iron pilot plant test production completed.
- Pig iron production process identified.

### 2.1 Mining and Dry Beneficiation Plant Layout

A provisional operation layout for Buena Vista has now been completed.

The mining & pit design has been completed by SRK Consulting and covers the initial two years of production at the mine.

The provisional plant layout has been carried out by Samuel Engineering.



Figure 4: Buena Vista iron ore mining & dry beneficiation plant layout.

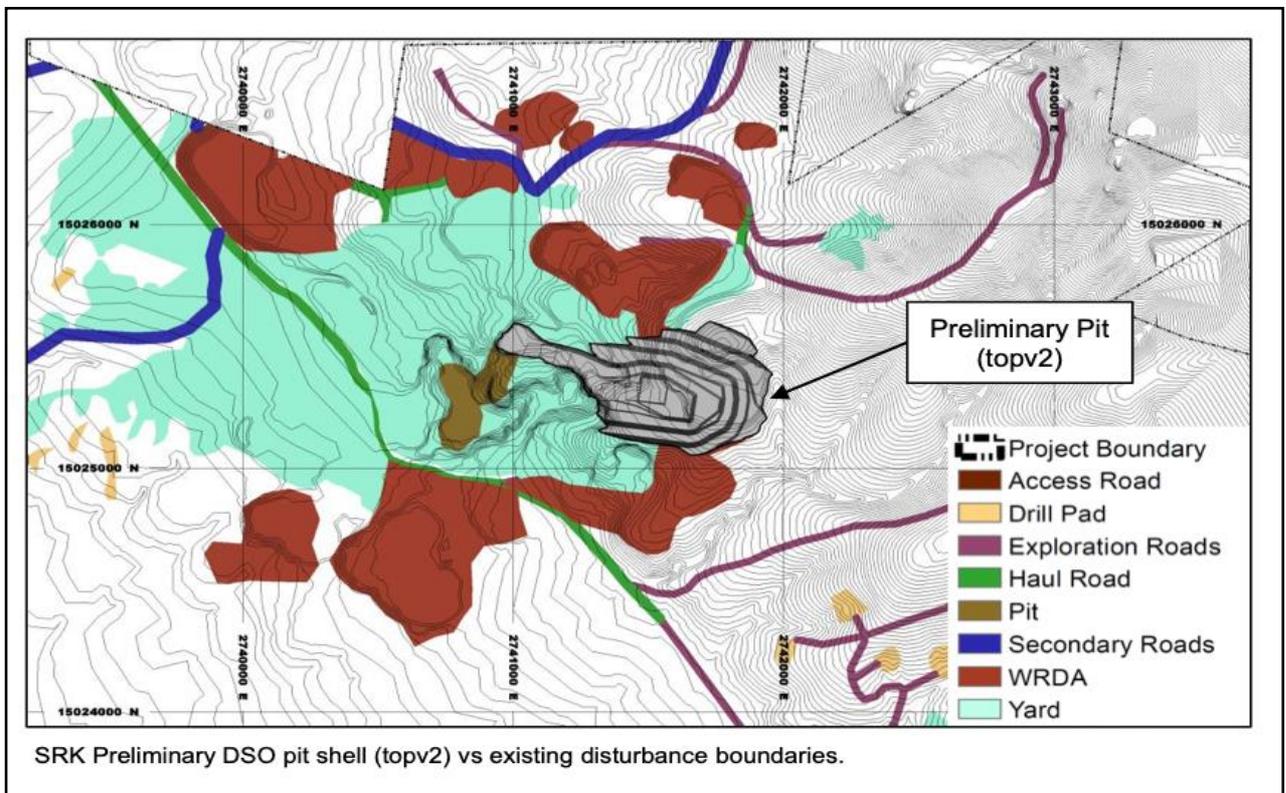


Figure 5: preliminary pit design.

## 2.2 Iron ore product quality

Extensive historical metallurgical test work that has been re-confirmed by more recent testing showing Buena Vista ore beneficiates very easily to a +60% Fe concentrate (see September 2021 quarterly report).

As a consequence this will allow Magnum to use a 'dry concentrate' process to produce the magnetite concentrate that will be the feed for the proposed integrated processing facility.

The use of a dry concentrating process has the potential to reduce capital costs and operating costs significantly.

During the December 2021 quarter test work was undertaken by SGS Laboratories (SGS) in a dry magnetic processing plant. The results of this test work re-confirmed that a coarse magnetite iron ore concentrate with low impurities can be produced by dry concentrating.



**Figure 6: Buena Vista 63% magnetite iron ore concentrate.**

This iron ore concentrate is suited for the biochar based reduction process.

## 2.3 Direct Reduction Iron Test Work

Magnum has commenced trial production of green sponge iron/ direct-reduced iron (DRI) sample products using 100% biochar (refer to ASX release dated 28 September 2021).

This test work uses magnetite ore from the Buena Vista Project and is in association with Beijing Shougang International Engineering Technology Co. Ltd. which is a subsidiary of the Shougang Group which ranks No 2 in steel enterprises in China.

The trial production uses a rotary kiln facility which is widely used worldwide and is capable of the integrated process of blending the magnetite iron ore directly with bio-char to produce green sponge iron / DRI products. The results from this work will provide Magnum with the technical

data required to design the optimal kiln size and feed grade of magnetite iron ore and bio-char and to estimate the initial capital cost and operating cost for a commercial sized rotary kiln.

Most importantly the Company now has a low impurity pig iron product to show potential customers.



**Lab Reference No.:MNT214561QD**  
 SGS Report No.:MSRQD2100712-01A  
 Testing Report Page: 2 / 2

Test Items	Unit	Result	Standard No.
		/	
TFe	%	63.00	GB/T 6730.5-2007
FeO	%	21.82	GB/T 6730.8-2016
Si	%	3.02	GB/T 6730.62-2005
Al	%	0.69	GB/T 6730.62-2005
P	%	0.016	GB/T 6730.62-2005
S	%	0.0680	GB/T 6730.17-2014
Volume average particle size	µm	43.21	GB/T 19077-2016

Remark : 1.Upon Client's request, the report has been issued in both Chinese and English. Only the Chinese version has legal effect. In case of any discrepancy between the Chinese and English versions, the Chinese version shall prevail.  
 2.The test result of Volume average particle size was performed by SGS internal other laboratory.  
 \*\*\*\*\*The end\*\*\*\*\*

Figure 7: SGS quality analysis Buena Vista magnetite iron ore concentrate.



**Lab Reference No.:MNT215097QD**  
 SGS Report No.:MSRQD2100795-01A  
 Testing Report Page: 2 / 2

Test Items	Unit	Result	Standard No.
		/	
Fe	%	94.46	GB/T 223.7-2002
Si	%	0.086	GB/T 223.60-1997
C	%	4.63	GB/T 223.86-2009
P	%	0.129	GB/T 223.59-2008
S	%	0.0270	GB/T 223.68-1997

\*\*\*\*\*The end\*\*\*\*\*

Figure 8: SGS quality certificate 100% biochar green pig iron using Buena Vista iron ore

Magnum management is planning to commence supply discussions with customers domestically in the USA as well as in Asia, early in the second quarter calendar of 2022.



**Figure 9: 100% biochar green pig iron using Buena Vista iron ore.**



**Figure 10: premium quality biochar from Biochar Now.**

## 2.4 Biochar Supply

Magnum has signed a Memorandum of Understanding (**MOU**) with Biochar Now, which owns and operates biochar research and production facilities in Colorado USA (refer to ASX Announcement dated 11 January 2022).

Biochar Now is the only biochar producer certified by both the International Organization for Standardisation (ISO), and the United States of America Environmental Protection Authority (EPA).

Biochar Now's products also are approved by the United States Department of Agriculture (USDA) and the Canadian Environmental Protection Act (CEPA).

Through this partnership the Buena Vista Project will have access to reliable and economical biochar supply for the production of green pig iron.

The parties are to jointly study:

- engineering and design of biochar production facility at the Buena Vista mine site;
- logistics arrangement of local biomass supply;
- maximize federal and state governments' carbon credit incentives; and
- ESG funding options from both government and private sectors.

## 2.5 Preliminary Marketing Studies

The Buena Vista Project is strategically located to supply US West Coast steel producers as can be seen in the map on the following page.

The Company would like to target these steel producers with a view to providing them with pig iron products produced from a production facility at the Buena Vista Project in the future.

The location of the proposed Nevada production facility close to West Coast steel producers compared to alternative suppliers, will provide a competitive advantage to Magnum as well as diversification of end user options and will ensure that the Company captures a transportation premium (refer to ASX release dated 28 September 2021).

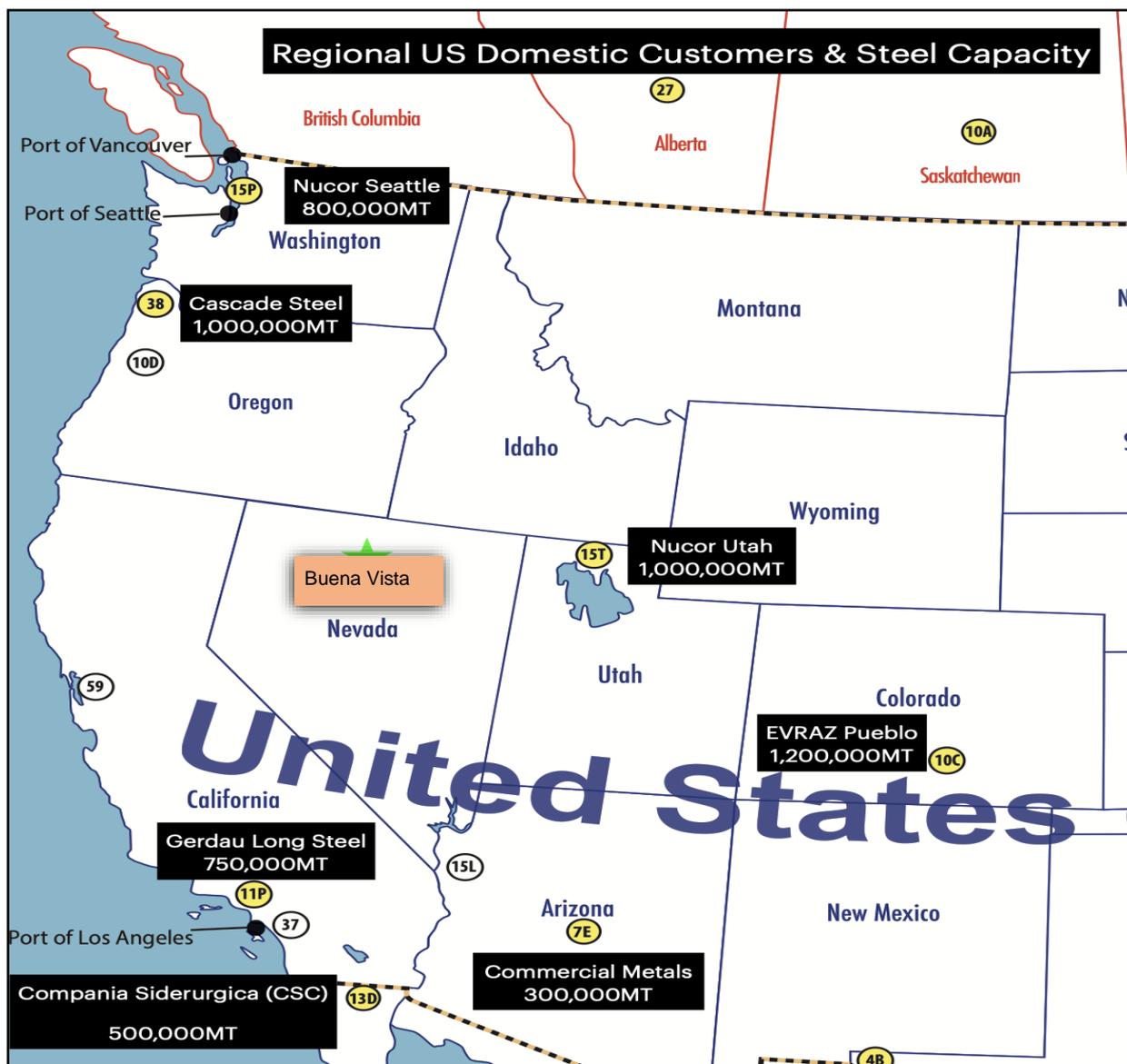


Figure 11: West Coast of USA EAF Steel Mill Locations and capacities

### 3.0 ABOUT THE BUENA VISTA MAGNETITE IRON ORE PROJECT

#### 3.1 Location and History

Buena Vista is located approximately 160km east-north-east of Reno in the mining friendly state of Nevada, United States.

The Buena Vista Project was discovered in the late 1890's and in the late 1950's to early 1960's around 900,000 tonnes of direct shipping magnetite ore with an estimated grade of 58% Fe was mined.

In the 1960's, US Steel Corporation acquired the Buena Vista Project and carried out an extensive exploration program including 230 diamond drill holes and considerable metallurgical test work.

The Buena Vista Project was refreshed in 2009 when Richmond Mining Limited, an ASX listed company, acquired Buena Vista and commenced a detailed exploration program culminating in

a definitive feasibility study in July 2011 and an updated study in 2013 for an expanded production rate.

A key component of these studies was extensive investigation of the optimal logistics plan for development of Buena Vista.

This included the negotiation of in-principle agreements with existing rail and port operators and the securing of all major mining permits.

In addition, detailed costings were completed on the trucking or slurry pipeline options to deliver the concentrate to the rail head located some 50 kilometres from mine site.

A significant decline in iron ore prices to an eventual low of less than US\$50/ tonne caused the then proposed development of Buena Vista to be deferred.

### 3.2 Geology

The Buena Vista Project magnetite deposits are the product of late-stage alteration of a localised intrusive local gabbro that resulted in intensely scapolitised lithologies and the deposition of magnetite.

The most well-known example of this type of magnetite mineralisation is the Kiruna magnetite deposit in Sweden, which has been in production since the early 1900's.

The distribution and nature of the magnetite mineralisation at Buena Vista is a function of ground preparation by faulting and fracturing, forming a series of open fractures, breccia zones and networks of fine fractures.

	Buena Vista (Magmatic)	Taconite (Banded iron)
Genesis	Metasomatic (hot solutions)	Non-magmatic precipitate
Grain size	Coarse	Fine
Grind size to liberate magnetite	+100 microns	Sub 15-20 microns
Capex	Lower capital intensity	Higher capital intensity
Opex	Lower opex	Higher opex

**Figure 12: Comparison table Buena Vista (magmatic) vs Taconite (BIF)**

These ground conditions produce variations in mineralization types from massive pods grading +60% magnetite to lighter disseminations grading 10-20% magnetite.

Metasomatic magnetite deposits such as those at Buena Vista have important positive beneficiation characteristics over the other main type of magnetite deposit which is a banded iron hosted magnetite, also known as a taconite.



**Figure 13: Buena Vista Project Area showing historic loadout facility and stockpiles**

### **3.3 Historic Drilling**

The Buena Vista Project has been extensively drilled with three main programs carried out.

The initial program was by US Steel Corporation in the early 1960's and was by BQ, NQ and HQ diamond drilling with holes surveyed for dip using a Tropari instrument.

A total of around 13,600 metres of core was completed and all holes were geologically logged and QA/QC'ed.

Around 5,000 samples across the magnetite mineralised zones were taken from the drill core and the magnetite content determined by Davis Tube. All testing was carried out at the Colorado school of Mines Research foundation.

In 2010, a confirmatory diamond drill program of around 930 metres was carried out by Richmond Mining Limited. This program, which was HQ was designed to twin various 1960's holes in order to test for vertical and lateral continuity as well as provide QA/QC confirmation on the historic drilling.

All of the core was geologically logged and then halved or quartered and samples assayed by American Assay Laboratories in Reno and SGS Laboratories in Perth.

In 2012, Nevada Iron Limited carried out a program comprising 3,420 metres of HQ diamond drilling and 13,024 metres of 138 mm reverse circulation drilling.

This program was designed to provide infill drilling for an expanded resource estimate, extend the boundaries of the known mineralised areas and provide additional core for definitive metallurgical beneficiation test work.

All drill holes from this program were geologically logged and the diamond holes surveyed down hole.

Samples from this program were prepared by ALS Global Laboratories in Reno and analysed by ALS Laboratories in Perth.

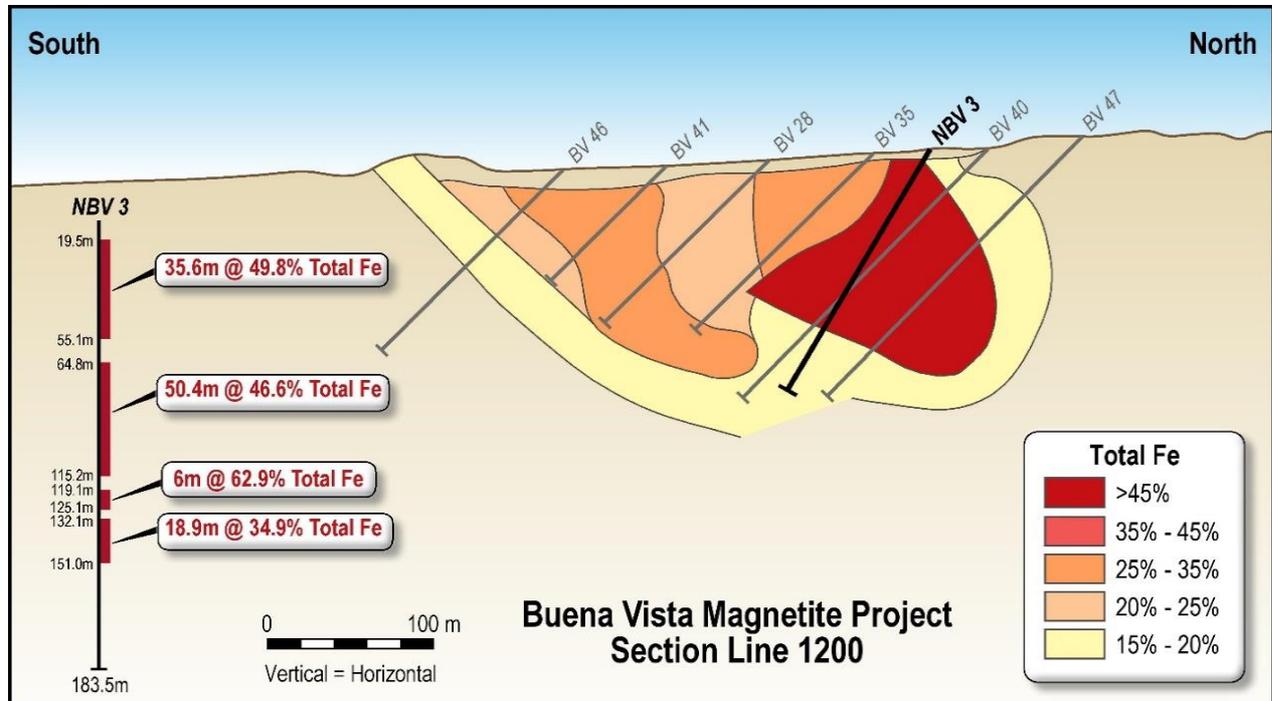


Figure 14: Section Line 1200 (2011 feasibility study)

### 3.4 Metallurgy

Unlike banded iron hosted magnetite deposits (taconites) where the magnetite mineralisation is finely disseminated in siliceous bedding planes, Buena Vista ore is of magmatic origin and as a consequence is coarser grained in association with the siliceous host rock.

The prime benefit of this is that metallurgical test work has shown that the primary crush of the Buena Vista ore on average increases the mill grade to +45% irrespective of the primary ore grade.

This is an important distinction to taconites and results in reduced energy usage for the subsequent crushing and grinding upgrade to the concentrate grade of +67.5%.

The Buena Vista concentrate contains no deleterious concentrations of impurities with silica typically 1.4-1.5%, alumina less than 1% and negligible sulphur and phosphorous content (around-0.003% respectively).

In addition, titanium and vanadium levels are low in the Buena Vista concentrate, typical levels are around 0.2% TiO<sub>2</sub> and 0.3% V.

### 3.5 Project Logistics

The Buena Vista Project mine site is ideally located, with towns Fallon (20,000 population) and Lovelock (8,000 population) within close proximity to the mine site. This provides site personnel

and their families the opportunity to reside in local communities with existing infrastructure and facilities.

The mine site is around 50kms from the Union Pacific rail line which connects with multiple export port options including Stockton, West Sacramento, Oakland, San Francisco and Richmond.

Grid power is available within 40km of the deposits and sufficient water can be sourced from ground water aquifers located in the North Carson sink.

The Nevada Department of Conservation and Natural Resources has already granted the required water rights for the life of the mine.

The mine is located in Churchill County in the State of Nevada which has a strong history of supporting mining developments and is easily accessed via the sealed Coal Canyon road.

### **3.6 JORC 2012 Resources**

On 23 March 2021, Magnum announced that the Buena Vista Mineral Resource had been updated in accordance with the 2012 edition of the JORC Code (JORC 2012).

Magnum reported that the Mineral Resources previously reported in 2012/13 under the 2004 JORC Code and the NI43-101 Code had undergone a comprehensive review and full evaluation by the Company's highly experienced and qualified independent consultant, MPR Geological Consultants.

The total Mineral Resource estimate increased as a result of this update with the key changes:

- A **31% increase** in total reported Mineral Resources from 177.3Mt to 232Mt;
- A **6% increase** in the indicated resource for the Section 5 area and a **25% increase** in the DTR% (Davis Tube Recovery Percentage);
- An **additional 40Mt** of inferred mineral resources for the West Pit area and 13% increase in the DTR%; and
- A **14% increase** in the inferred resource for the East Pit area.

The Company confirms that it is not aware of any new information or data that materially affects the information included in this Quarterly Report and that all material assumptions and technical parameters underpinning the estimates in the announcement of the 'Maiden JORC Resources for the Buena Vista Magnetite Project' dated 23 March 2021 continue to apply and have not materially changed.

Estimates at 10% Fe cut off										
Deposit	Resource Category	2013			2021			Difference		
		Mt	Fe%	DTR%	Mt	Fe%	DTR%	Mt	Fe%	DTR%
Section 5	Ind	32.1	17.7	16.8	34	17.4	21.0	6%	-2%	25%
	Inf	0	0.0	0.0	8.0	16	18	-	-	-
	<b>Subtotal</b>	<b>32.1</b>	<b>17.7</b>	<b>16.8</b>	<b>42</b>	<b>17</b>	<b>20</b>	<b>31%</b>	<b>-3%</b>	<b>22%</b>
West	Ind	116.6	19.1	21.2	117	19.5	23.9	0%	2%	13%
	Inf	0	0.0	0.0	40	17	21	-	-	-
	<b>Subtotal</b>	<b>116.6</b>	<b>19.1</b>	<b>21.2</b>	<b>157</b>	<b>19</b>	<b>23</b>	<b>35%</b>	<b>-1%</b>	<b>9%</b>
East	Ind	0	0.0	0.0	0.0	0.0	0.0	-	-	-
	Inf	28.9	19.6	23.4	33	19	23	14%	-3%	-2%
	<b>Subtotal</b>	<b>28.9</b>	<b>19.6</b>	<b>23.4</b>	<b>33</b>	<b>19</b>	<b>23</b>	<b>14%</b>	<b>-3%</b>	<b>-2%</b>
Total	Ind	148.7	18.8	20.3	151	19.0	23.2	2%	1%	15%
	Inf	28.9	19.6	23.4	81	18	22	180%	-10%	-8%
	<b>Total</b>	<b>177.6</b>	<b>18.9</b>	<b>20.8</b>	<b>232</b>	<b>18.6</b>	<b>22.6</b>	<b>31%</b>	<b>-2%</b>	<b>9%</b>

**Table 1: JORC (2012) reported mineral resources compared with 2013 NI43-101 estimate.**

The data base for the JORC 2012 mineral resource estimate utilised data from 139 diamond drill holes totally 23,061 metres and 50 reverse circulation drill holes totalling 13,024 metres.

#### 4.0 OPERATIONS AT GRAVELLOTTE REMAIN CONSTRICTED

Activities at the Company's Gravelotte emerald project (located in the Limpopo Province in South Africa) remain restricted to care and maintenance and desk stop studies as a result of travel restrictions and restrictions placed on site activities due to the Covid pandemic.

As a result of the Company's focus on the Buena Vista Project Magnum continues to assess the best option for Gravelotte moving forward. One option may be the sale of the asset.

#### 5.0 EXPLORATION INTERESTS

The following tenement information is provided in accordance with ASX Listing Rule 5.3.3 for the quarter ended 31 December 2021:

##### Buena Vista Project

Claim Name	BLM Serial Nos.	BLM Lead Serial No.	Claim Type
KMD 1	NMC956471	NMC956471	Lode
KMD 2	NMC956472	NMC956471	Lode
KMD 3	NMC956473	NMC956471	Lode
KMD 4	NMC956474	NMC956471	Lode
KMD 5	NMC956475	NMC956471	Lode
KMD 6	NMC956476	NMC956471	Lode
KMD 7	NMC956477	NMC956471	Lode
KMD 8	NMC956478	NMC956471	Lode
KMD 9	NMC956479	NMC956471	Lode

KMD 10	NMC1049632	NMC1049632	Lode
KMD 11	NMC956481	NMC956471	Lode
KMD 12	NMC956482	NMC956471	Lode
KMD 13	NMC956483	NMC956471	Lode
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NvFe 1	NMC1045283	NMC1045283	Lode
NvFe 2	NMC1045284	NMC1045283	Lode
NvFe 3	NMC1045285	NMC1045283	Lode

NvFe 4	NMC1045286	NMC1045283	Lode
NvFe 5	NMC1045287	NMC1045283	Lode
NvFe 6	NMC1045288	NMC1045283	Lode
NvFe 7	NMC1045289	NMC1045283	Lode
NvFe 8	NMC1045290	NMC1045283	Lode
NvFe 9	NMC1068429	NMC1068429	Lode
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NvFe 11	NMC1068431	NMC1068429	Lode
NvFe 12	NMC1068432	NMC1068429	Lode
NvFe 13	NMC1068433	NMC1068429	Lode
NvFe 14	NMC1068434	NMC1068429	Lode
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NvFe 16	NMC1068436	NMC1068429	Lode
NvFe 17	NMC1068437	NMC1068429	Lode
NvFe 18	NMC1068438	NMC1068429	Lode
NvFe 19	NMC1068439	NMC1068429	Lode
NvFe 20	NMC1075996	NMC1075996	Lode
NvFe 21	NMC1075997	NMC1075996	Lode
NvFe 22	NMC1075998	NMC1075996	Lode
NvFe 23	NMC1075999	NMC1075996	Lode
NvFe 24	NMC1076000	NMC1075996	Lode
NvFe 25	NMC1076001	NMC1075996	Lode
NvFe 26	NMC1076002	NMC1075996	Lode
NvFe 27	NMC1076003	NMC1075996	Lode
NvFe 28	NMC1076004	NMC1075996	Lode
NvFe 29	NMC1076005	NMC1075996	Lode
NvFe 30	NMC1076006	NMC1075996	Lode
NvFe 31	NMC1076007	NMC1075996	Lode
NvFe 32	NMC1076008	NMC1075996	Lode
NvFe 33	NMC1076009	NMC1075996	Lode
NvFe 34	NMC1076010	NMC1075996	Lode
NvFe 35	NMC1076011	NMC1075996	Lode

NvFe 36	NMC1076012	NMC1075996	Lode
NvFe 37	NMC1076013	NMC1075996	Lode
NvFe 38	NMC1076014	NMC1075996	Lode
NvFe 39	NMC1076015	NMC1075996	Lode
NvFe 40	NMC1076016	NMC1075996	Lode
NvFe 41	NMC1076017	NMC1075996	Lode
NvFe 42	NMC1076018	NMC1075996	Lode
NvFe 43	NMC1076019	NMC1075996	Lode
NvFe 44	NMC1076020	NMC1075996	Lode
NvFe 45	NMC1076021	NMC1075996	Lode
NvFe 46	NMC1076022	NMC1075996	Lode
NvFe 47	NMC1076023	NMC1075996	Lode
NvFe 48	NMC1076024	NMC1075996	Lode
NvFe 49	NMC1076025	NMC1075996	Lode
NvFe 50	NMC1076026	NMC1075996	Lode
NvFe 51	NMC1076027	NMC1075996	Lode
NvFe 52	NMC1076028	NMC1075996	Lode
NvFe 53	NMC1076029	NMC1075996	Lode
NvFe 54	NMC1076030	NMC1075996	Lode
NvFe 55	NMC1076031	NMC1075996	Lode
NvFe 56	NMC1076032	NMC1075996	Lode
NvFe 57	NMC1076033	NMC1075996	Lode
NvFe 58	NMC1076034	NMC1075996	Lode
NvFe 59	NMC1076035	NMC1075996	Lode
NvFe 60	NMC1076036	NMC1075996	Lode
NvFe 61	NMC1076037	NMC1075996	Lode
NvFe 62	NMC1076038	NMC1075996	Lode
NvFe 63	NMC1076039	NMC1075996	Lode
NvFe 64	NMC1076040	NMC1075996	Lode
NvFe 65	NMC1076041	NMC1075996	Lode
NvFe 66	NMC1076042	NMC1075996	Lode
NvFe 67	NMC1076043	NMC1075996	Lode

NvFe 68	NMC1076044	NMC1075996	Lode
NvFe 69	NMC1076045	NMC1075996	Lode
NvFe 70	NMC1076046	NMC1075996	Lode
NvFe 71	NMC1076047	NMC1075996	Lode
NvFe 72	NMC1076048	NMC1075996	Lode
NvFe 73	NMC1076049	NMC1075996	Lode
NvFe 74	NMC1076050	NMC1075996	Lode
NvFe 75	NMC1076051	NMC1075996	Lode
NvFe 76	NMC1076052	NMC1075996	Lode
NvFe 77	NMC1076053	NMC1075996	Lode
NvFe 78	NMC1076054	NMC1075996	Lode
NvFe 79	NMC1076055	NMC1075996	Lode
NvFe 80	NMC1076056	NMC1075996	Lode
NvFe 81	NMC1076057	NMC1075996	Lode
NvFe 82	NMC1076058	NMC1075996	Lode
NvFe 83	NMC1076059	NMC1075996	Lode
NvFe 84	NMC1076060	NMC1075996	Lode
NvFe 85	NMC1076061	NMC1075996	Lode
NvFe 86	NMC1076062	NMC1075996	Lode
NvFe 87	NMC1076063	NMC1075996	Lode
NvFe 88	NMC1076064	NMC1075996	Lode
NvFe 89	NMC1076065	NMC1075996	Lode
NvFe 90	NMC1076066	NMC1075996	Lode
NvFe 91	NMC1076067	NMC1075996	Lode
NvFe 92	NMC1076068	NMC1075996	Lode
NvFe 93	NMC1076069	NMC1075996	Lode
NvFe 94	NMC1076070	NMC1075996	Lode
NvFe 95	NMC1076071	NMC1075996	Lode
NvFe 96	NMC1076072	NMC1075996	Lode
NvFe 97	NMC1076073	NMC1075996	Lode
NvFe 98	NMC1076074	NMC1075996	Lode
NvFe 99	NMC1076075	NMC1075996	Lode

NvFe 100	NMC1076076	NMC1075996	Lode
NvFe 101	NMC1076077	NMC1075996	Lode
NvFe 102	NMC1076078	NMC1075996	Lode
NvFe 103	NMC1076079	NMC1075996	Lode
NvFe 104	NMC1076080	NMC1075996	Lode
NvFe 105	NMC1076081	NMC1075996	Lode
NvFe 106	NMC1076082	NMC1075996	Lode
NvFe 108	NMC1076083	NMC1075996	Lode
NvFe 109	NMC1076084	NMC1075996	Lode
NvFe 110	NMC1076085	NMC1075996	Lode
NvFe 111	NMC1076086	NMC1075996	Lode
NvFe 112	NMC1076087	NMC1075996	Lode
NvFe 113	NMC1076088	NMC1075996	Lode
NvFe 114	NMC1076089	NMC1075996	Lode
NvFe 115	NMC1076090	NMC1075996	Lode
HNVFE NO 1	NMC1093640	NMC1093640	Mill Site
HNVFE NO 2	NMC1093641	NMC1093640	Mill Site
HNVFE NO 3	NMC1093642	NMC1093640	Mill Site
HNVFE NO 4	NMC1093643	NMC1093640	Mill Site
HNVFE NO 5	NMC1093644	NMC1093640	Mill Site
HNVFE NO 6	NMC1093645	NMC1093640	Mill Site
HNVFE NO 7	NMC1093646	NMC1093640	Mill Site
HNVFE NO 8	NMC1093647	NMC1093640	Mill Site
HNVFE NO 9	NMC1093648	NMC1093640	Mill Site
HNVFE NO 10	NMC1093649	NMC1093640	Mill Site
HNVFE NO 11	NMC1093650	NMC1093640	Mill Site
HNVFE NO 12	NMC1093651	NMC1093640	Mill Site
HNVFE NO 13	NMC1093652	NMC1093640	Mill Site
HNVFE NO 14	NMC1093653	NMC1093640	Mill Site
HNVFE NO 15	NMC1093654	NMC1093640	Mill Site
HNVFE NO 16	NMC1093655	NMC1093640	Mill Site
HNVFE NO 17	NMC1093656	NMC1093640	Mill Site

HNVFE NO 18	NMC1093657	NMC1093640	Mill Site
HNVFE NO 26	NMC1093665	NMC1093640	Mill Site
HNVFE NO 27	NMC1093666	NMC1093640	Mill Site
HNVFE NO 28	NMC1093667	NMC1093640	Mill Site
HNVFE NO 29	NMC1093668	NMC1093640	Mill Site
HNVFE NO 30	NMC1093669	NMC1093640	Mill Site
HNVFE NO 31	NMC1093670	NMC1093640	Mill Site
HNVFE NO 32	NMC1093671	NMC1093640	Mill Site
HNVFE NO 33	NMC1093672	NMC1093640	Mill Site
HNVFE NO 34	NMC1093673	NMC1093640	Mill Site
HNVFE NO 35	NMC1093674	NMC1093640	Mill Site
HNVFE NO 36	NMC1093675	NMC1093640	Mill Site
HNVFE NO 37	NMC1093676	NMC1093640	Mill Site
HNVFE NO 38	NMC1093677	NMC1093640	Mill Site
HNVFE NO 39	NMC1093678	NMC1093640	Mill Site
HNVFE NO 40	NMC1093679	NMC1093640	Mill Site
HNVFE NO 41	NMC1093680	NMC1093640	Mill Site
HNVFE NO 42	NMC1093681	NMC1093640	Mill Site
HNVFE NO 43	NMC1093682	NMC1093640	Mill Site
HNVFE NO 44	NMC1093683	NMC1093640	Mill Site
HNVFE NO 45	NMC1093684	NMC1093640	Mill Site
HNVFE NO 46	NMC1093685	NMC1093640	Mill Site
HNVFE NO 47	NMC1093686	NMC1093640	Mill Site
HNVFE NO 48	NMC1093687	NMC1093640	Mill Site

Gravelotte Project

<b>Location</b>	<b>Project</b>	<b>Tenement Type</b>	<b>Number</b>	<b>Interest</b>	<b>Status</b>
Limpopo Province, South Africa	Gravelotte	Mining Right	MPT 85/2014	74%	Granted
Limpopo Province, South Africa	Gravelotte	Prospecting Right	LP 204 PR	74%	Granted

## CORPORATE REPORT

### 6.0 ASX: ANNOUNCEMENTS RELEASED DURING THE DECEMBER 2021 QUARTER

29 Oct'21	Quarterly Activities/Appendix 5B Cash Flow Report
12 Nov'21	Notice of Initial Substantial Holder
1 Dec'21	Successful Green Pig Iron Production
13 Dec'21	Appendix 3Y- Director Purchase of MGU Shares
16 Dec'21	Buena Vista Iron Ore Project Update
16 Dec'21	Response to Appendix 3Y Query

### 7.0 APPENDIX 5B

As set out in the corresponding Appendix 5B to this Quarterly Activities Report, there were no mining development or production activities conducted during the December 2021 Quarter resulting in no exploration expenditure in the period. Payments to related parties totalling \$15,000 consisted of remuneration paid to non-executive directors under their respective service agreements.

This document has been authorised for release to the ASX by the Company's Board of Directors.

Further information please contact:

**John Dinan**  
**Non-Executive Director and Company Secretary**

Magnum Mining and Exploration Limited  
John Dinan  
+61 2 8316 3989  
email: info@mmel.com.au

## Appendix 5B

### Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Name of entity

Magnum Mining and Exploration Limited

ABN

70 003 170 376

Quarter ended ("current quarter")

31 December 2021

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (12 months) \$A'000
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	-	-
1.2 Payments for		
(a) exploration & evaluation	(544)	(2,581)
(b) development	-	-
(c) production	-	-
(d) staff costs	-	-
(e) administration and corporate costs	(417)	(1,632)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	-	-
1.5 Interest and other costs of finance paid	-	(1)
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	-	-
1.8 Other	-	-
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(961)</b>	<b>(4,214)</b>

<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire or for:		
(a) entities	-	(450)
(b) tenements	-	-
(c) property, plant and equipment	-	(884)
(d) exploration & evaluation	-	-
(e) investments	-	-
(f) other non-current assets	-	-

## Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (12 months) \$A'000
2.2	Proceeds from the disposal of:		
	(a) entities	-	-
	(b) tenements	-	-
	(c) property, plant and equipment	-	-
	(d) investments	-	161
	(e) other non-current assets	-	-
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other (provide details if material)	-	-
<b>2.6</b>	<b>Net cash from / (used in) investing activities</b>	-	<b>(1,173)</b>

<b>3.</b>	<b>Cash flows from financing activities</b>		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	-	9,016
3.2	Proceeds from issue of convertible debt securities	-	-
3.3	Proceeds from exercise of options	-	1,389
3.4	Transaction costs related to issues of equity securities or convertible debt securities	(2)	(642)
3.5	Proceeds from borrowings	-	-
3.6	Repayment of borrowings	-	(163)
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other (Share buy-back)	-	-
<b>3.10</b>	<b>Net cash from / (used in) financing activities</b>	<b>(2)</b>	<b>9,600</b>

<b>4.</b>	<b>Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1	Cash and cash equivalents at beginning of period	5,380	206
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(961)	(4,214)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	-	(1,173)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	(2)	9,600

## Mining exploration entity or oil and gas exploration entity quarterly cash flow report

<b>Consolidated statement of cash flows</b>		<b>Current quarter \$A'000</b>	<b>Year to date (12 months) \$A'000</b>
4.5	Effect of movement in exchange rates on cash held	15	13
<b>4.6</b>	<b>Cash and cash equivalents at end of period</b>	<b>4,432</b>	<b>4,432</b>

<b>5.</b>	<b>Reconciliation of cash and cash equivalents</b> at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	<b>Current quarter \$A'000</b>	<b>Previous quarter \$A'000</b>
5.1	Bank balances	4,432	5,380
5.2	Call deposits	-	-
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
<b>5.5</b>	<b>Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>4,432</b>	<b>5,380</b>

<b>6.</b>	<b>Payments to related parties of the entity and their associates</b>	<b>Current quarter \$A'000</b>
6.1	Aggregate amount of payments to related parties and their associates included in item 1	15
6.2	Aggregate amount of payments to related parties and their associates included in item 2	-

*Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.*

## Mining exploration entity or oil and gas exploration entity quarterly cash flow report

<b>7. Financing facilities</b>	<b>Total facility amount at quarter end \$A'000</b>	<b>Amount drawn at quarter end \$A'000</b>
<i>Note: the term "facility" includes all forms of financing arrangements available to the entity.</i>		
<i>Add notes as necessary for an understanding of the sources of finance available to the entity.</i>		
7.1 Loan facilities	-	-
7.2 Credit standby arrangements		
7.3 Other (please specify)		
7.4 <b>Total financing facilities</b>	-	-
7.5 <b>Unused financing facilities available at quarter end</b>		-
7.6 Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.		

<b>8. Estimated cash available for future operating activities</b>	<b>\$A'000</b>
8.1 Net cash from / (used in) operating activities (item 1.9)	(961)
8.2 (Payments for exploration & evaluation classified as investing activities) (item 2.1(d))	-
8.3 Total relevant outgoings (item 8.1 + item 8.2)	(961)
8.4 Cash and cash equivalents at quarter end (item 4.6)	4,432
8.5 Unused finance facilities available at quarter end (item 7.5)	-
8.6 Total available funding (item 8.4 + item 8.5)	4,432
8.7 <b>Estimated quarters of funding available (item 8.6 divided by item 8.3)</b>	4.61
<i>Note: if the entity has reported positive relevant outgoings (ie a net cash inflow) in item 8.3, answer item 8.7 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.7.</i>	
8.8 If item 8.7 is less than 2 quarters, please provide answers to the following questions:	
8.8.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?	
Answer: Not applicable	
8.8.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?	
Answer: Not applicable	

## Mining exploration entity or oil and gas exploration entity quarterly cash flow report

8.8.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?

Answer: Not applicable

*Note: where item 8.7 is less than 2 quarters, all of questions 8.8.1, 8.8.2 and 8.8.3 above must be answered.*

### Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: 31 January 2022

.....

By the Board

Authorised by: .....  
(Name of body or officer authorising release – see note 4)

### Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 6: Exploration for and Evaluation of Mineral Resources* and *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.