Quarterly Activities Report for three months ending 30 September 2020

ASX Release
30 October 2020

Magnum Mining and Exploration Limited
ABN 70 003 170 376

ASX Code
MGU

Non-Executive Chairman
Howard Dawson

Chief Executive Officer
Grant Button

Non-Executive Director
Francesco Cannavo

Company Secretary
Grant Button

Issued Shares
321,265,480

Listed Options
109,839,603
Exp 30/09/2022 @ $0.05

Email
info@mmel.com.au

Website
www.mmel.com.au

Suite 2, Churchill Court
234 Churchill Avenue
SUBIACO WA 6008

PO BOX 8209
SUBIACO EAST WA 6008

T +61 8 6280 0245
F +61 8 9381 2855

HIGHLIGHTS

New Project - Buena Vista

- Acquisition of the Buena Vista magnetite iron ore project located in mining friendly Nevada, United States
- Buena Vista is a significant magnetite mineral resource with over $A34 million spent on it over the past decade advancing the project to completed feasibility status in 2011 and 2013.
- The project has secured all major permits for the long-term production of a high grade magnetite concentrate grading +67.5% Fe.
- The project is well situated to existing rail, power and port facilities.
- Pursuant to the purchase Magnum is undertaking a title and data due diligence which is estimated for completion by early December 2020.
- Experienced resource executive Simon Baldwin has joined Magnum to manage the due diligence, co-ordinate the update of the feasibility study and be executive in charge for the financing and proposed development of Buena Vista.
- Magnum is targeting completion of an updated feasibility study by mid 2021before a decision to mine.
- Total acquisition cost is up to $A7.0 million paid via a combination of shares in Magnum and cash with $A5.5 million of the acquisition cost linked to key project milestones.

Gravelotte

- Final sorting testing well advanced with Optical and XRF both showing high level accuracy and efficiencies.
- Mine planning well advanced for commencement of production from Cobra North pit.
- Indicative costings received for crushing and washing circuit.
- Funding options review/analysis to commence in current quarter.
- Covid restrictions within South Africa progressively being lifted.

THE BUENA VISTA MAGNETITE IRON ORE PROJECT

Location and History

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

The 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 project and carried out an extensive exploration program including 230 diamond drill holes and considerable metallurgical test work.

The project was refreshed in 2009 when Richmond Mining Limited, an ASX listed company acquired the project 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.

Resources

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

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

The distribution and nature of the magnetite mineralization 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. 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 beneficiation characteristics over the other main type of magnetite deposit which is a banded iron hosted magnetite, also known as a taconite.

	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

Buena Vista has had two recent resource estimates completed. The first, a JORC 2004 resource estimate was completed for the definitive feasibility study by Western Australian based consultants Geostat Services in conjunction Veltox Pty Ltd in July 2011.

A N143-101 report was then commissioned by Nevada Iron for a dual listing on the Canadian TSX-V and completed in October 2013. This report was undertaken by consultants AMC Consultants, Crosscut Consulting and Holland and Holland.

The N143-101 study estimated Indicated and Inferred resources at Buena Vista as 178.5Mt at 18.9% Fe producing a magnetite concentrate grading 68.1% Fe with no significant impurities.

Based on established market economics the study concluded that the high-grade concentrate was expected to attract a minimum 20% price premium to the bench mark Hamersley 62% fines from buyers.

Important Note

The Company considers these foreign estimates (pursuant to ASX LR 5.12) to be both material and relevant to the decision by the Company to acquire the Buena Vista Project. There is a significant data base available over the Project from various companies dating from the early 1960's through to the present day. This data base includes extensive diamond drilling and conventional and Davis Tube assay results, comprehensive metallurgical testing, hydrogeological drilling and test work. Logistical studies include quoted costings for power supply, road, rail, slurry pipe and port transport, tailings dam design, geotechnical studies for pit design and infrastructure placement, plant design, detailed capex and opex costings, detailed financial modelling and analysis and permitting approvals. The NI43-101 report, completed in October 2013 is based on this extensive data base and has synthesised this data into a comprehensive summary of the Project and its potential, including an estimate of available resources. The report was prepared on behalf of Nevada Iron Limited, a publicly listed ASX and TSX-V company by reputable and experienced consulting groups (AMC Consultants, Crosscut Consulting and Holland and Holland) and incorporated the extensive data utilized in a definitive feasibility study completed over the Project by GR Engineering Limited in July 2011. The Company's Competent Person has reviewed the report and informed the Company that it was prepared in a competent and conservative manner. The resource as calculated pursuant to the NI43-101 report has been classified as Indicated and Inferred. These categories are comparable (see Cautionary Statement) with the categories used by JORC Code 2012. It is the opinion of the Company and the Competent Person that these estimates are reliable and represent the results of work done to high

standards, using quality sampling, testing and geological and geostatistical modelling. The foreign estimates represent best practice work at the time.

Mineral Resource Estimation Methodology (carried out by AMC Consultants for the NI43-101 report dated October 2013)

- Drill hole samples were flagged to identify which geological and mineralogical zone they represent.
- Each sample was flagged according to where the mid-point of the sample lies relative to the relevant wireframes.
- Drill hole samples were flagged with a DOMAIN code to identify which mineralisation and lithological domain they represent.
- For the West deposit additional zone fields were created based on the structural interpretation.
- Samples were composited to 1.5m in length for the West deposit and 3m for the East deposit to ensure all samples have the same sample support. Compositing was not considered necessary for Section 5 as more than 97% of this deposit was collected in 1.5m lengths.
- A wire frame model was constructed for each deposit (Section 5, West and East) in Datamine using standard model prototype parameters.
- Sub celling down to 3.8m E x 3.8m N x 1.5m RL was used to ensure domain boundaries were honored as accurately as possible.
- The wireframe model parameters were determined after due consideration of the drill hole spacing over the entire deposit.
- To build the Fe mineralisation domain components AMC manually created 3D grade shell wireframes for the various Fe domains
- Low Grade >7.5% Fe, High Grade >15% Fe for Section 5 deposit
- Low Grade >10% Fe, Med Grade >20% Fe, High Grade >50% Fe for East and West deposits
- Variography was undertaken on Fe for the flagged 1.5m composites using Visor software for Section 5 and West deposits.
- Grade estimates were completed using ordinary kriging for all 3 deposits
- A Mineral Reserve was estimated using optimisation software to determine the optimal pit design.

Cautionary Statement: The information disclosed above was prepared and first disclosed under the NI43-101. National Instrument 43-101 is a national instrument for the disclosure for mineral projects within Canada or mineral properties owned by, or explored by, companies which report these results on stock exchanges within Canada. The NI43-101 is broadly comparable to the JORC 2012 Code. The content of the technical reports, and the scientific rigors to which the mineral resource classifications within them are put, are often very similar and in many cases, NI43-101 and JORC Code technical reports are considered inter-changeable. The NI43-101 report was based on the historic exploration work completed by parties prior to 2012 and hence to update the NI43-101 analysis to JORC 2012 the same historic data base will be evaluated. The NI43-101 report has not been prepared by the Company and has not been updated to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported. The resource estimates may not comply with JORC Code 2012 and a Competent Person has not done sufficient work to classify the estimates to comply with the JORC Code 2012. A review of the data on behalf of the Company indicates the estimates were prepared in a competent manner and nothing has come to the attention of the Company that causes it to question the accuracy or reliability of the former owners' estimates but the Company has not

independently validated the former owners' estimates and therefore is not to be regarded as reporting, adopting or endorsing these estimates.

It is possible that following further evaluation and/or further exploration work that the estimates presented may materially change and will be needed to be reported afresh under and accordance with the JORC Code 2012.

JORC 2012 Mineral Resource Estimate

Magnum is of the opinion that the Buena Vista data base is sufficiently detailed to allow a JORC 2012 mineral resource estimate to be carried out without additional drilling or other technical activities such as metallurgical test work or geotechnical studies. As a consequence the work required to update the NI43-101 estimate to JORC 2012 will comprise verification of the data base and confirmation of the mineral resource estimate using three dimensional software.

Buena Vista Project Area showing historic loadout facility and stockpiles

Historic Drilling

Buena Vista has been extensively drilled with three main programmes having been carried out.

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

A total of around 13,600 metres of core was completed and all holes were geologically logged.

Around 5,000 samples across the magnetite mineralized 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.

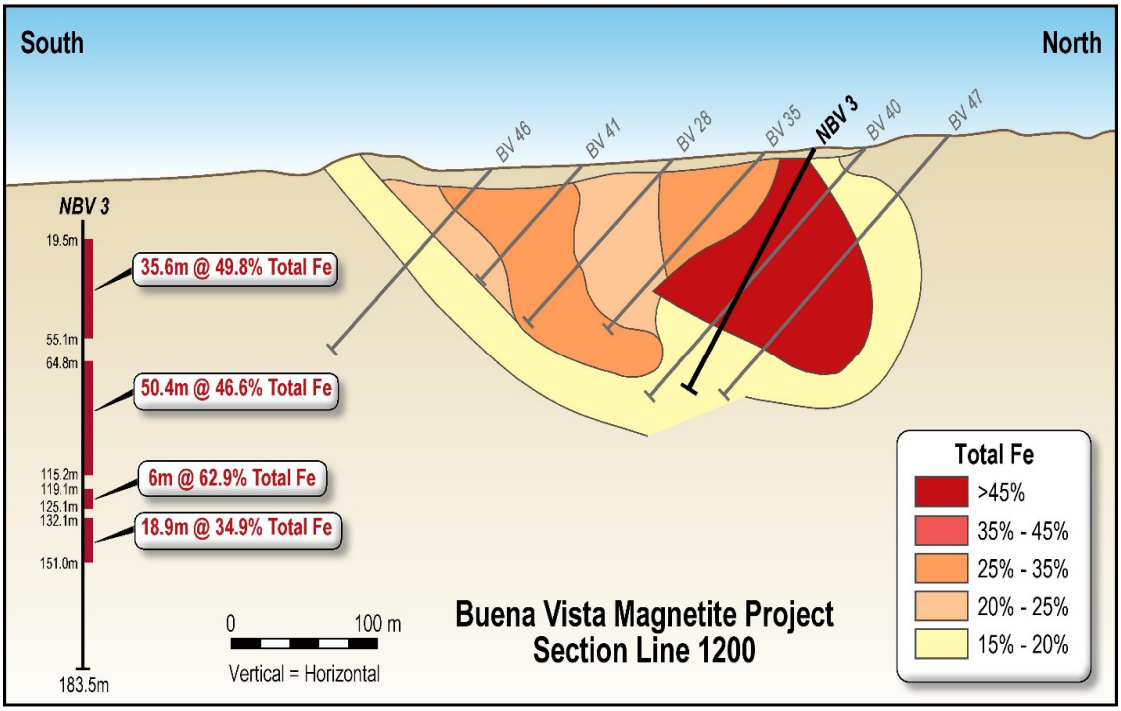
In 2010 a confirmatory diamond drill programme of around 930 metres was carried out by Richmond Mining Limited. This programme, which was HQ was designed to twin various 1960's holes in order to test for vertical and lateral continuity as well as provide QA/QC information on the historic drilling.

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 programme comprising 3,420 metres of HQ diamond drilling and 13,024 metres of 138 mm reverse circulation drilling.

This programme was designed to provide infill drilling for an expanded resource estimate, extend the boundaries of the known mineralized areas and provide additional core for definitive metallurgical beneficiation test work. All drill holes from this programme were geologically logged and the diamond holes surveyed down hole.

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



Section Line 1200 (2011 feasibility study)

Metallurgy

Unlike banded iron hosted magnetite deposits (taconites) where the magnetite mineralization is finely disseminated in siliceous bedding planes, the 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_2 and 0.3% V.

Project Logistics

The Buena Vista 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 personal 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.

Massive high grade magnetite core

Proposed Works Programme

As a result of the modern feasibility studies the Buena Vista project has already completed all of the required technical studies such as drilling and metallurgy which are integral to support development.

In addition, important logistical options such as road, rail and port access have been evaluated and costed.

Based on the historical feasibility studies the Buena Vista project presents a unique near-term development opportunity with low capital and low estimated operating costs presenting a robust case against current iron ore prices.

The historic data provides a sound basis for Magnum to undertake an updated feasibility study with the main variable being the optimum annual average production rate.

Magnum has commenced the due diligence with a focus on the accuracy and completeness of the data base and to confirm title and development permit approvals.

Following the due diligence, the proposed works programme to produce an updated feasibility study in preparation for the development of Buena Vista will be as follows:

1. **Review and verify the existing data and update the mineral resources to JORC 2012 compliance using three dimensional software**

2. **Review the existing capex and opex estimates of the previous feasibility studies and update to 2020/21 costs**

3. **Initiate confirmatory negotiations with logistic providers including power, rail and ports.**

4. **Evaluate rail, slurry and road options for transport of concentrate to rail head**

5. **Commence discussions with potential debt financiers for the development of Buena Vista**

6. **Evaluate and determine the optimal production rate for the project.**

THE GRAVELOTTE PROJECT, SOUTH AFRICA

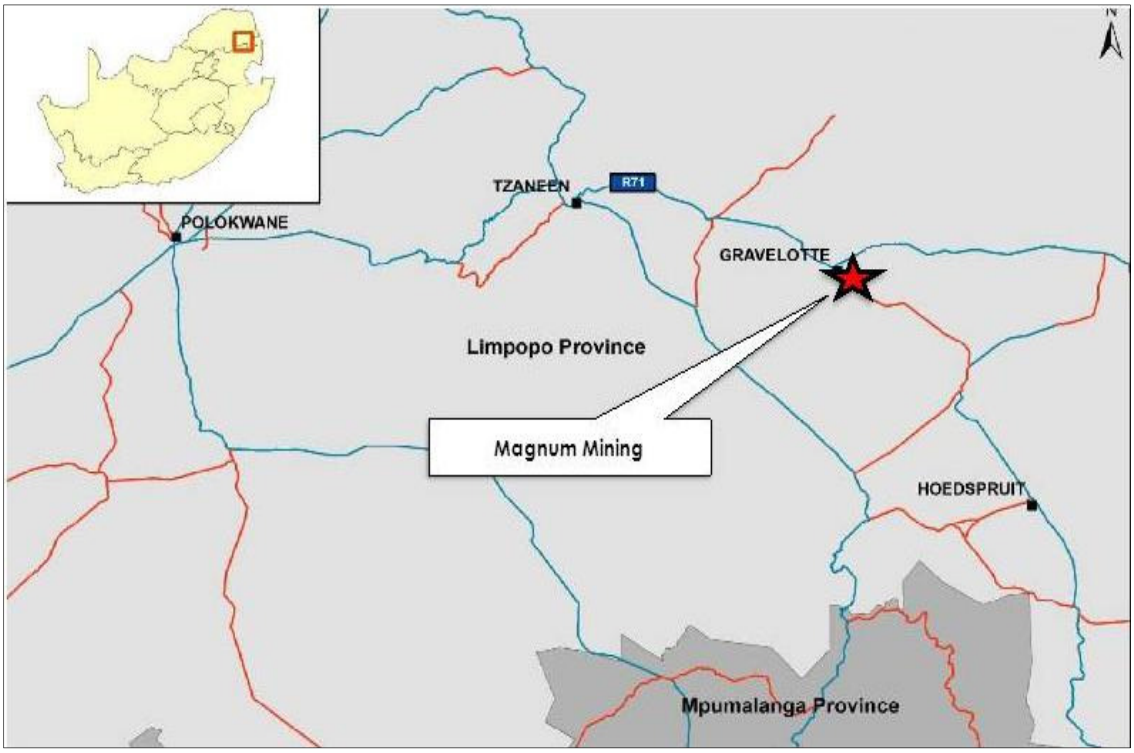
Location and History

Magnum's 74%-owned Gravelotte Project is located in the Limpopo Province of South Africa.

Emeralds were discovered in the province in 1927 and, since then, several companies have explored for and mined within the broader region for emeralds.

From 1929 to 1982 the total recorded emerald production from the Gravelotte Project, as well as the area surrounding the nearby Gravelotte Township, was nearly 113 million carats.

It is reported that during the 1960's the Gravelotte Project itself was the largest emerald mine of its type in the world, employing over 400 sorters.



Gravelotte Location Map

Why is Magnum at Gravelotte?

The Gravelotte project provides Magnum with a medium term production opportunity in the niche commodity of emeralds where demand is growing.

The project offers established infrastructure, existing and accessible open cuts together with extensive low grade dumps, a large (albeit incomplete) historic data base, a nearby and available work force, local on-site technical expertise and a nearby township that can serve as a supply centre.

The Company has maintained and refurbished much of the extensive mine site infrastructure at Gravelotte including offices, laboratory, workshops, garages, management accommodation complex and a mine hostel to accommodate mine workers.

The mine site is well situated with utilities and logistics being serviced by ESKOM grid power, has a sealed road to the mine gate and has a working airstrip.

The Next Steps to Development

The Gravelotte Project is now at the pre-development stage and activities during the quarter focused on finalising mine planning and preferred sorting options.

In addition, final quotations for the processing equipment (expanded crusher and washing and screening circuit) were sourced.

Operations will commence within the Cobra North pit where current planning is for around 5 years of production before potential underground mining is required.

The Cobra South and Discovery Pits will provide additional sources of material for potential expansion of operations during this period.

Gravelotte Project showing existing infrastructure and mining stockpiles

Geology

The emerald mineralisation at Gravelotte is contained within a mafic schist that is bounded by a granite and a felsic porphyry. Historic production and drilling data shows that whilst the large majority of the schist is emerald mineralised, the grade distribution is inhomogeneous.

As a consequence the majority of grade control within the proposed mining operation will rely on other indicators of emerald mineralization such as the presence of discolouration of the schist, biotite alteration and development of pyrite.

This grade control will be carried out through the logging of the blast hole material and visual examination of the run of mine material.

Sorting options for the recovery of the emeralds

Magnum has been in continuous engagement for over six months with leading manufacturers of material sorting solutions. Sorting of the emeralds is the tertiary stage in the processing and the Company is assessing the two main options available – Optical sorting or sorting using XRF technology.

The use of either of these technologies effectively mechanizes the operation and removes the requirement to hand sort.

Whilst the use of XRF technology during the trail mining programme was technically successful the test work did suffer from some instrument related outages which did affect the processing rate. As a consequence and also because of recent advances in colour sorting technology for emeralds it was decided that Optical technology should also be assessed.

Optical sorting trials carried out during the quarter on samples of Gravelotte ore shipped to Germany showed very positive results across all three measures – accuracy, precision and throughput.

The finalisation of this test work and the final XRF testing during the current quarter will allow the Company to confirm both the costs and lead time for the delivery of the appropriate sorting technology.

EXPLORATION INTERESTS

The following tenement information is provided in accordance with ASX Listing Rule 5.3.3 for the quarter ended 30 September 2020:

Location	Tenement Type	Number	Interest at beginning of Quarter	Interests relinquished, reduced or lapsed	Interests acquired or increased	Interest at end of Quarter	Status
Limpopo Province, South Africa	Mining Right	LP 153 CMR	74%	-	-	74%	Granted
Limpopo Province, South Africa	Prospecting Right	LP 30/5/1/1/3/2/1/ 204PR	74%	-	-	74%	Granted

CORPORATE

Simon Baldwin

In tandem with the acquisition of Buena Vista, Magnum is pleased to advise that Simon Baldwin has agreed to join the Company in an executive capacity and will become a Director on completion of the due diligence phase of Buena Vista.

Simon is an experienced resource industry executive with 25 years of geological, commercial, finance and marketing experience in large project development.

Prior to joining Magnum, Simon was the Head of Commercial and Vice-President Marketing at Oil Search Limited. In this role he developed new agreements to underpin the integration of Papua New Guinea LNG projects and led the companies LNG and Domestic Gas sales teams.

Prior to Oil Search, Simon worked with ATCO Australia, leading M&A business, spent 15 years with Woodside Petroleum, and led exploration and resource evaluation programs for BHP Iron Ore and international power companies.

Simon has a Bachelor of Applied Science (Geology) from RMIT, a Graduate Diploma in Applied Finance and Investment (FINSIA) where he was awarded both National and State prizes, and an Executive Certificate in Global Management from INSEAD.

Placement of new shares

On 16 July 2020 Magnum issued 8,333,330 new shares and 8,333,330 free attaching options pursuant to a placement to provide working capital for completion of pre-development logistics planning and sorter test work for Gravelotte.

The shares were issued at $0.03 and the shares and options were issued without disclosure to existing shareholders in Magnum pursuant to Part 6D.2 in reliance to Section 708(5) of the Corporations Act (refer to ASX announcement dated 16 July 2020).

On 13 October 2020 Magnum issued 8,333,332 new shares to provide working capital to finalise the due diligence pursuant to the proposed acquisition of the Buena Vista Project.

The shares were issued at $0.03 and were issued without disclosure pursuant to Part 6D.2 in reliance to Section 708(5) of the Corporations Act (refer to ASX announcement dated 9 October 2020).

As part of the Buena Vista transaction Magnum intends to, subject to shareholder approval, issue and additional 25,000,000 shares at $0.03 to a range of strategic and institutional investors.

The funds raised will be used to update the Buena Vista feasibility study and advance funding options for the projects development, continue ongoing pre-development activities at Gravelotte and provide general working capital.

Further Cost savings

Corporately, the Magnum Board has forgone all payment or accrual of Directors Fees since June 2019.

VAT Refund

The VAT refund of AU$80,000 from the South African Revenue Service (SARS) did not occur during the September quarter.

As stated in previous quarters, and showing continued optimism, it is hoped that payment will received in the current quarter.

ASX: MGU Announcements Released During the September 2020 Quarter

27/10/2020	*Progress Report*
13/10/2020	*Appendix 2A*
12/10/2020	*Progress Report*
9/10/2020	*Acquisition of Buena Vista Magnetite Project and Placement*
11/09/2020	*Half Yearly Report and Accounts*
30/07/2020	*Quarterly Activities Report and Quarterly Cashflow Report*
16/07/2020	*Appendix 2A and Disclosure Document*
14/07/2020	*Placement and Proposed Issue of Securities*

GRANT BUTTON
Chief Executive Officer/Joint Company Secretary

Further information please contact:

Magnum Mining and Exploration Limited
Grant Button
+61 8 6280 0245
email: info@mmel.com.au

Competent Persons Statement

*The information in this announcement that relates to Exploration Results and Mineral Resources complies with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (**JORC Code**) and has been compiled and assessed under the supervision of Mr Howard Dawson, Non-Executive Director of Magnum Mining and Exploration Limited. Mr Dawson is a member of the Australian Institute of Geoscientists and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the JORC Code. Mr Dawson consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.*