

## ASX ANNOUNCEMENT

20 MARCH 2023

### RAZORBACK IRON PROJECT ORE RESERVES INCREASE 340% - AMENDED

*Amendment: Refer to 'cut-off parameter' disclosure added to JORC Table 1 Section 4, page 12*

#### Highlights:

- Updated Razorback Ore Reserves increased to 1.6 billion tonnes of iron ore
- Increase of 1.1 billion tonnes over 473 million tonne 2021 Maiden Ore Reserves
- Iron Peak not yet included; considerable upside potential from current studies

#### Magnetite Mines CEO Tim Dobson commented:

"Magnetite Mine's decision to increase the production scale of Razorback to a minimum 5Mtpa along with our recently updated Mineral Resource Estimate has catalysed this update of the Razorback Project Ore Reserves. The results of this work are based on the assessment of an experienced third-party Competent Person, in compliance with JORC 2012 guidelines, of a technically and economically viable project at Razorback, with the updated Ore Reserves determined by respected Australian mining consultants AMC Consultants Pty Ltd (AMC).

"The updated Ore Reserves are classified as Probable and have been calculated using only the most accurate and highest-confidence project data available. With a mass recovery of 14.2%, these Ore Reserves would sustain operations at 5 million tonnes per year production for around 45 years.

"The team is now completing mining studies on the recently upgraded, high-grade Iron Peak deposit and we can expect a further uplift in Project Ore Reserves to be announced in the near future."

**Magnetite Mines Limited (ASX:MGT)** is pleased to announce an updated Ore Reserves estimate for its 100% owned Razorback Iron Ore Project located in the Braemar Iron Formation in South Australia:

**Table 1. Razorback Iron Project Ore Reserves estimate at March 2023**

Probable Ore Reserves*	Tonnes Mt	eDTR %	Fe %	Mag %
Weathered	131	12.5	18.4	10.9
Primary	1,484	14.3	17.5	13.8
<b>TOTAL</b>	<b>1,615</b>	<b>14.2</b>	<b>17.6</b>	<b>13.6</b>

\*Ore Reserves are a subset of Mineral Resources

The updated Ore Reserves estimate for the Project has been derived from the recently updated Mineral Resources<sup>1</sup> by generating schedules with an estimated tonnage and grade which, in the opinion of the Competent Person, form the basis of a technically and economically viable project, after taking account of material relevant Modifying Factors.

The term 'economically mineable' as used in the JORC 2012 guidelines implies that, in the judgement of the Competent Person, extraction of the Ore Reserves has been demonstrated to be both economic and viable using reasonable technical and financial assumptions. These assumptions have been provided by the Company, by various consulting and advisory groups commissioned by the Company, and by AMC Consultants, and have been reviewed by the Competent Person. Studies have confirmed a mine plan and production schedule that are technically achievable and economically viable and from which the Ore Reserves are derived.

### **Summary Of Reporting Criteria**

The updated Ore Reserves are classified as Probable Ore Reserves following JORC 2012 guidelines and are based on the Indicated Mineral Resource at the Razorback Iron Project<sup>1</sup>. The Ore Reserves has been determined by AMC Consultants after consideration of all relevant geological, mining, metallurgical, social, environmental, statutory and financial aspects of the Project.

The material assumptions which support the Ore Reserves estimate are based on Pre-Feasibility Study level (PFS) results with a combination of AACE Engineering standards to Class 3, 4 and 5 level estimates with a targeted accuracy of  $\pm 25\%$ . The assumptions specific to the Ore Reserves estimation are summarised below and are further disclosed within JORC Table 1 – Section 4 included as Appendix 1 to this announcement.

Ore Reserves were estimated only on the Indicated portion of the Razorback Mineral Resource Estimate. The Ore Reserves was based on an open pit optimisation of the February 2023 block model for the Razorback deposit utilising appropriate modifying factors, followed by detailed mine design and mining production schedules.

The Ore Reserves do not include material from the recent Iron Peak Mineral Resource update as mining studies have not yet been completed for this portion of the Resource Estimate. The Ore Reserves have been classified as Probable based on guidelines specified in JORC Code (2012) subject to mine designs, Modifying Factors and economic evaluation.

### **Mining Methods and Assumptions**

The Ore Reserves assumes open pit mining with truck and shovel with drill and blast, to feed the process plant with an average of 36.2Mtpa of ore. The resulting schedule for the Project generates a Life of Mine (LOM) strip ratio of just 0.42 (waste to ore). To note, the strip ratio over the first 5 years is 0.17, indicating there is effectively no pre-stripping required and lower cost mining operations are front ended to increase project value.

All mine planning was undertaken by AMC Consultants Pty Ltd, leveraging off their 2022 work on the Razorback deposit to develop an optimised mine plan. The previous work showed that, at the higher mining rates required for 5Mtpa of concentrate, 10m benches provided the best compromise between ore dilution, drill and blast cost intensity and mining cost intensity. AMC also reviewed the 2013 Geotechnical review completed by Golder Associates, which recommended a wall angle of 75°, berm width of 8.5m and a batter height of 20m for a safe pit design.

Following the development of pit geometry, AMC diluted the Razorback Resource Model (using Indicated classified material only as ore) by consolidating based on cut-off grade and minimum mining

width and ran pit optimisations using the Whittle 4X<sup>®</sup> implementation of the Lerchs-Grossman (LG) algorithm. This work defined the ultimate pit extents identifying that the majority of the Indicated Mineral Resources generated a positive cash flow when the base case parameters were applied.

The Minemax<sup>®</sup> schedule optimiser was used with a conceptual haulage model to identify the pit development sequence which would maximise the value of the project. The LG shell and sequencing results were then used to guide the ultimate and staged pit designs.

The pit is developed as a series of thirteen stages, a detailed haulage model was developed, and the stages were scheduled using Minemax to identify the optimal schedule to deliver the required concentrate.

The bench turnover rates required for the schedule are generally low and illustrate that mine development should not be a potential risk to achieving the plan.

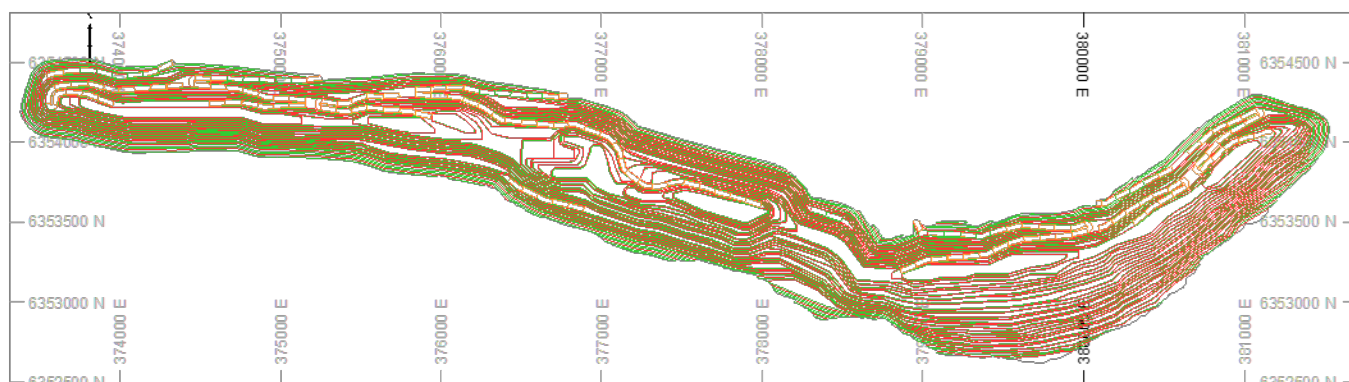


Figure 1. Fully refined mine design of final pit shell at Razorback deposit

Revenue inputs for the mining schedule used a 97% eDTR to plant mass recovery conversion factor (as advised by Hatch) and a 68.5% concentrate quality (see below). All capital and operating cost inputs are based on OEM budget pricing and AMC's various databases.

### Processing Methods and Assumptions

Extensive metallurgical test work has been completed for the Razorback Iron deposit as previously reported by the Company<sup>2,3</sup>. The outputs of this work indicated the ore-body's ability to produce 67.5% to 68.5% Fe concentrates with testwork also validating flowsheet and equipment selection (Figure 2).

The metallurgical and process engineering work was undertaken by engineering consultants Hatch to refine the flowsheet, which was then used to generate a AACE Class 3 level of accuracy estimate with suitable accuracy for inclusion to PFS levels estimates for capital cost. The selected flowsheet was based on conventional gyratory crushing/cone crushers followed by air separation and HPGR grinding. Separation is based on conventional magnetite separation using LIMS followed by fine grinding and flotation. Following flotation processing, conventional pressure filtration will be used to dewater the resulting high-grade product to 8% moisture content. The average final grind size of P80 38 microns is expected targeting a 67.5% to 68.5% Fe final concentrate product.

Tailings will be directed to a Central Thickened Discharge tailings facility (CTD) from which process water is recovered. The Tailings Storage Facility (TSF) design and placement studies were completed by engineering consultants Hatch to Australian National Committee on Large Dams (ANCOLD) 2019 standards.

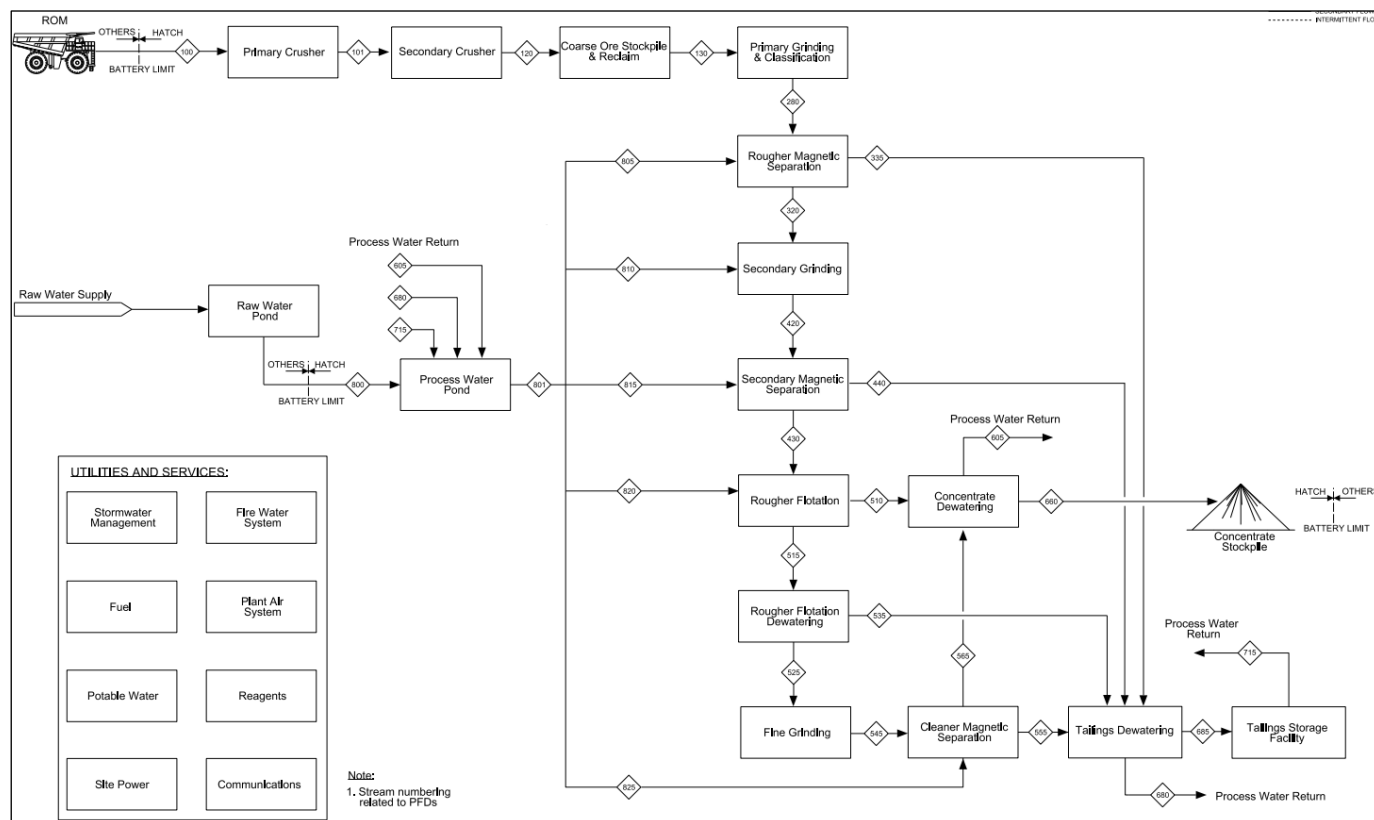


Figure 2: Razorback Process Flowsheet – block diagram

## Economic Assumptions and Analysis

A mining and processing strategy was developed based on consideration of annual processing plant throughput rate of 38 Mt of ore. This was considered in conjunction with assumptions on the availability of capital and the long-term iron ore market. This equates to a base-case concentrate production of approximately 5 million tonnes per year.

Capital costs have been completed with a +/-20% accuracy. Operating costs are considered to be of a +/-25% level of accuracy. An 8% discount rate has been used for financial modelling, which includes all project level operating costs as well as initial and sustaining capital costs.

## PROJECT BACKGROUND

### Razorback Iron Project Location and Tenure

The Razorback Iron Project is located approximately 55 kilometres south of Yunta, on the margin of the Nackara Arc in regional South Australia (Figure 3).

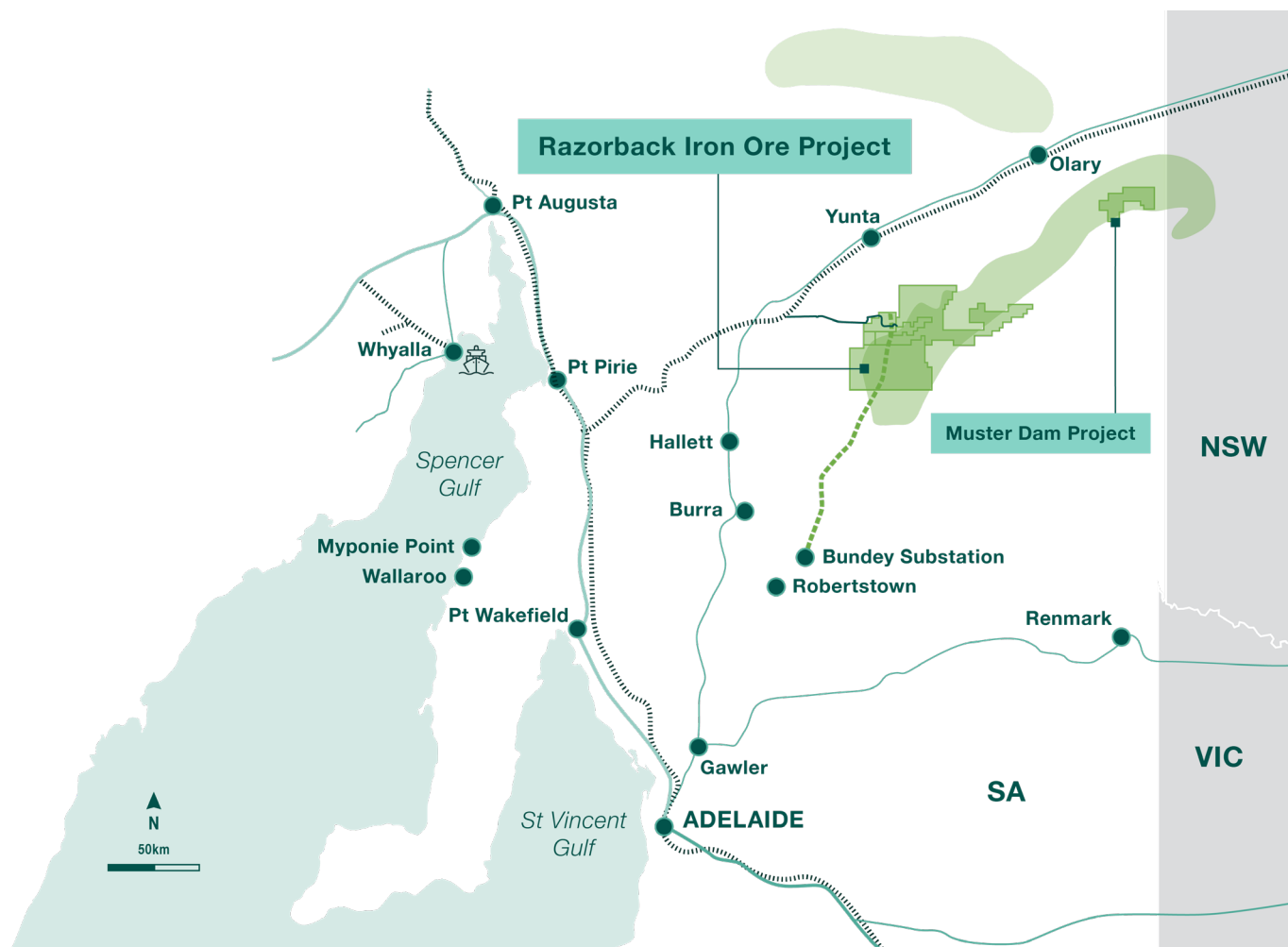


Figure 1: Razorback Iron Project location and regional infrastructure

In total, the Company holds 2,251km<sup>2</sup> of tenure as related to the Razorback Iron Project. The deposits associated with the Razorback Iron Project are located primarily on the EL6353 and EL6126 tenements. Outside of those tenements the adjacent EL6127, 5902 and 6037 tenements host several Braemar Iron Formation prospects including the Ironback Hill deposit and will accommodate a combination of processing and non-process infrastructure associated with the Project mining development. The tenements are held by Magnetite Mines Limited together with its 100% owned subsidiaries Razorback Iron Pty Ltd and Ironback Pty Ltd.

The Ngadjuri People are the Native Title claimants and Traditional Owners of the Project area. The Company negotiated a Native Title Mining Agreement (NTMA) in 2011 for exploration purposes that is

inclusive of the Razorback Iron Project tenement package. A suitable agreement with the Traditional Owners will be required for mining purposes. Based on the results of ongoing baseline studies there are no major social or environmental impediments known to exist with respect to the proposed mining operation.

### **Regional Infrastructure**

The Project site is within economic distances of existing infrastructure in the North East Pastoral district. Site access would be via the Barrier Highway and a new access road/haul approximately 44 kilometres in length. Engineering consultants, GHD completed a road access and trucking study which forms the basis of road transport for the mining scenario. The road design will be suitable for construction traffic access, road haulage and daily operational traffic.

Engineering consultants GHD in collaboration with ElectraNet provided proposals for power supply to the mine site. Power supply for the Project is proposed from a connection to ElectraNet's regulated transmission network at the Bunday substation, south-southwest of the Project site. The infrastructure consists of approximately 120 kilometres of new 275 kV transmission line, and new substation near the Razorback Mine Project site. The power line will interface to a new 275/11kV substation on site to service the mine site (including processing plant, non-process infrastructure, and camp).

The Project is planned to operate as a Drive-In Drive-Out (DIDO) operation with dedicated on-site accommodation and non-process infrastructure facilities designed and budgeted. Services and consumable supplies will be delivered by existing roads and the private haul access road. The Company currently holds the mineral rights the Project areas and prospects therein. The tenements extend beyond the immediate proposed mining area.

### **Social, Environmental and Approvals**

Studies completed by Ecological Australia towards baseline ecology studies indicate limited potential for listed flora or fauna species within the Project area. The Company is continuing the assessment of fauna and flora prior to finalising an impact assessment study that will establish management processes required during construction and/or operational stages of the Project to adequately protect any species of significance.

Waste rock and tailings characterisation work has been completed and all waste types and tailings are non-acid forming and have limited metal leachate potential.

The permitting process for the Project is transparent, clearly defined and well understood in South Australia.

Water supply is assumed from a proposed coastal desalination plant and dedicated pipeline to the minesite, representing a feasible technical solution for water supply. Further water supply studies are ongoing to secure water offtake opportunities outside of this Ore Reserves assumption.

### **Geology and Mineral Resources**

The Razorback Iron Project covers sedimentary lithologies of the Adelaide Geosyncline, a linear north-south to north-east trending tectonic rift basin comprising sediments deposited during the late



Proterozoic and early Cambrian Eras. The host rock to the magnetite at the Razorback Iron Project Neoproterozoic glaciogenic meta-sediment of the Braemar Iron Formation.

The mineralisation within the Braemar Iron Formation forms a simple dipping tabular body with only minor faulting, folding and intrusives. Grades, thickness, dip, and outcropping geometry remain very consistent over kilometres of strike. While the bedded magnetite has the highest in-situ iron content, typically 19-35% Fe, the tillitic unit, at typically 15-26% Fe is diluted by the inclusion of lithic fragments, such as iron-poor granite and metasedimentary dropstones.

Razorback Ridge iron deposit is positioned on the north dipping (approximately 40° to 60°) limb of the Pualco Anticline. Whitten (1970) divided the Braemar Iron Formation at Razorback into seven sedimentary packages, comprising members A to G, with a total thickness ranging from 480m to 780m. Of these, members A, B, D and G are of economic interest and all outcrop or sub-crop at the surface, with member B forming the prominent ridge.

The Razorback Iron Project Mineral Resource Estimate of February 2023 was completed by Widenbar and Associates using an updated geological model interpretation which sought to improve mineralisation resolution using down hole geophysics and high-resolution mass recovery determinations (through Davis Tube Recovery testwork)<sup>x</sup>. Mineral Resource estimation for the Razorback and Iron Peak deposits is compliant with 2012 JORC Code and guidelines and was presented to the market on 9 February 2023. The Mineral Resource estimate for the Razorback Iron Project as of February 2023 is outlined in Table 2 below.

**Table 2: Razorback Iron Project February 2023 Mineral Resource Estimate<sup>1</sup>**

Classification	Million Tonnes (Mt, dry)	Mass Rec (eDTR%)	Fe%	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	P%	LOI%	Magnetite%
<b>Indicated</b>	1,680	15.9	18.4	48.0	8.1	0.18	5.5	15.0
<b>Inferred</b>	1,570	16.1	17.7	48.6	8.2	0.18	5.5	15.5
<b>TOTAL</b>	<b>3,250</b>	<b>16.0</b>	<b>18.1</b>	<b>48.3</b>	<b>8.1</b>	<b>0.18</b>	<b>5.5</b>	<b>15.3</b>

*All figures quoted at an 11% eDTR cut-off. Magnetite Mines Limited is not aware of any new information or data that materially affects the information included in the resource announcement dated February 2023 and all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The 8% eDTR utilised in the Ore Reserve differs from the Current Mineral Resource estimate which quotes an 11% eDTR cut off and is based on up-to-date mining assumptions.*

The Ore Reserves and associated proposed mine plan are considered technically achievable. All proposals for the operational phase involve the application of conventional mining technology which is widely utilised in Australia and globally. Financial modelling completed as part of the PFS shows that the Project is economically viable under current assumptions. In the opinion of the Competent Person, cost assumptions and modifying factors applied in the process of estimating Ore Reserves are reasonable. The Ore Reserves is considered to provide the basis of a technically and economically viable project. Material assumptions (mining, processing, infrastructure, economic, commercial, environmental and social) have been considered as part of the PFS and during the Ore Reserves estimation process. Further detailed is provided in Appendix 1.

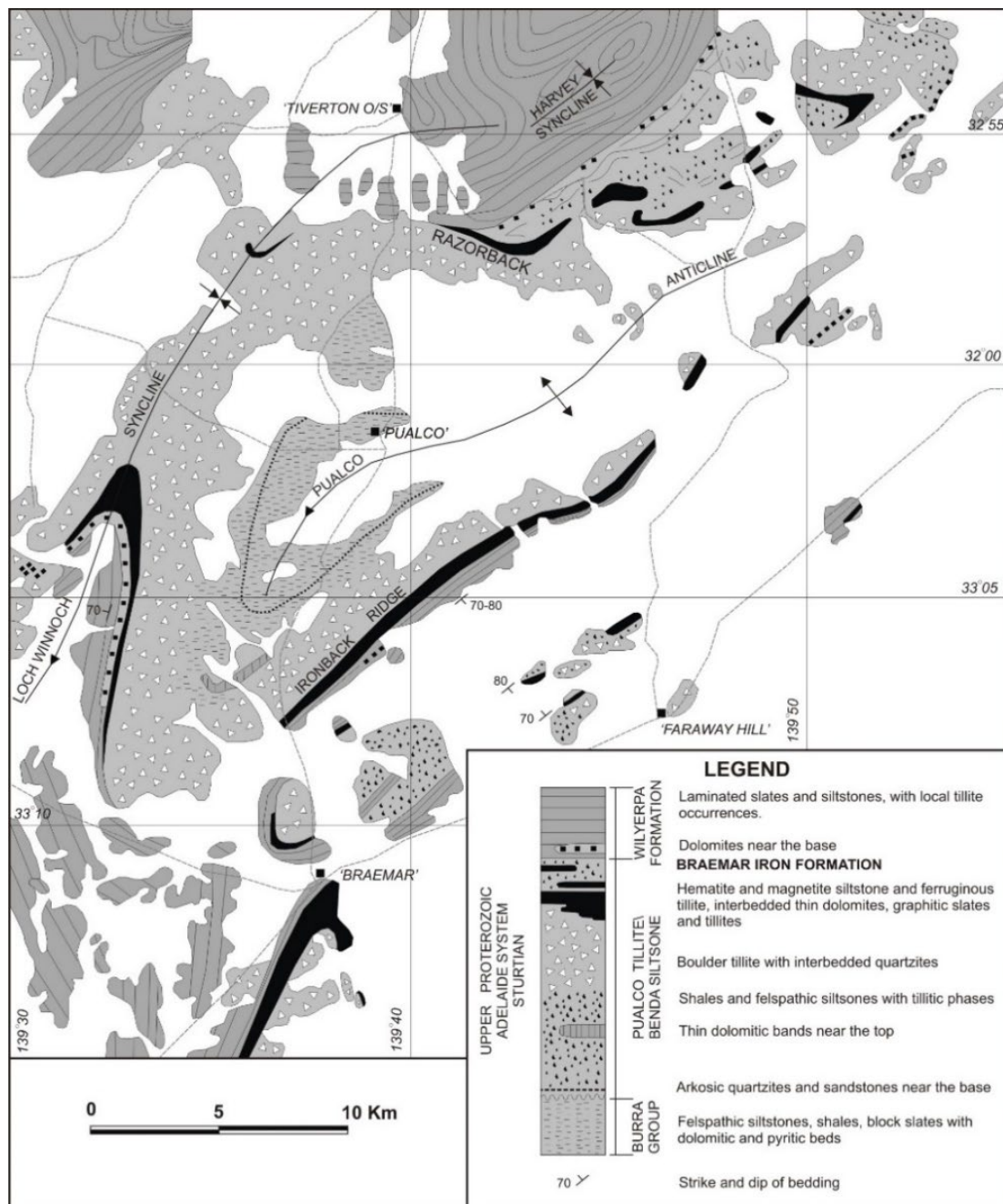


Figure 2: Regional geology of the Razorback Iron Project area (modified after Lottermoser and Ashley, 2000)



**Competent Persons Statement:**

The information in this report that relates to Ore Reserves is based on and fairly represents information and supporting documentation compiled by James Stoddart, BEng(Mining), a Competent Person who is a Fellow of the Australasian Institute of Mining and Metallurgy (AusIMM). James Stoddart is a Principal Mining Engineer for AMC Consultants Pty Ltd and is consulting to Magnetite Mines Limited. James Stoddart has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activities being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (JORC 2012). James Stoddart consents to the inclusion in the report of the matters based on his information in the form and context in which they appear. The Ore Reserves estimates have been compiled in accordance with the guidelines defined in the JORC Code.

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**This announcement has been authorised for release to the market by the Board.**

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**ABOUT MAGNETITE MINES**

Magnetite Mines Ltd is an ASX-listed iron ore company focused on the development of magnetite iron ore resources in the highly-prospective Braemar iron region of South Australia. The Company has a 100% owned Mineral Resource of 6 billion tonnes of iron ore and is developing the Razorback Iron Ore Project, located 240km from Adelaide, to meet accelerating market demand for premium iron ore products created by iron & steel sector decarbonisation, with the potential to produce high-value Direct Reduction (DR) grade concentrates. Razorback is set to become a very long-life iron ore project with expansion optionality in a tier 1 jurisdiction that will produce a superior iron ore product sought by steelmakers globally. For more information visit [magnetitemines.com](https://magnetitemines.com).

**References**

1. ASX Announcement – 9 Feb 2023 - Iron Peak Mineral Resource Significantly Improved
2. ASX Announcement – 21 July 2022 - Positive Interim Metallurgical Test Results
3. ASX Announcement - 28 Feb 2023 - Metallurgy Confirms Flowsheet and DR Pellet Feed Potential

## APPENDIX 1 – JORC TABLE 1

### Section 4 - Estimation and Reporting of Ore Reserves – 2023 Update

Criteria	JORC Code Explanation	Commentary
<b>Mineral Resource estimate for conversion to Ore Reserves</b>	<p>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</p> <p>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</p>	<p>Sections 1, 2 and 3 of the JORC Table 1 as related to the Mineral Resources can be found in the MGT <a href="#">ASX Release dated 9 February 2023</a>. The Mineral Resource Estimate used as the basis for the conversion to Ore Reserve was announced to the public via ASX on 9 February with consultant Mr. Lynn Widenbar of Widenbar Associates providing competent person sign off for Resource and Mr. Trevor Thomas providing competent person sign off for Exploration data.</p> <p>The 2023 Mineral Resource Estimate was completed using geological interpretation and 3D modelling provided by MBGS and reviewed by Magnetite Mines Limited and resource estimation using Ordinary Kriging as completed by Widenbar Associates. The geological model has been used to constrain the interpolation of the block model, with hard boundaries being used for some 19 separate geological units at both Razorback and Iron Peak. Statistical analysis and metallurgical test work indicated that the weathering (oxide) zone behaves differently to the fresh zone, and consequently the weathering/fresh interface has been used as a hard boundary.</p> <p>Following geostatistical analysis, an Ordinary Kriging interpolation method has been used: a block size of 10 m (E) by 5 m (N) by 5 m (RL) has been used, to enable adequate representation of geological zones, as the strike varies from 100° to 045° and dip from 30° to 70°.</p> <p>The geological domains have been “unfolded” to simplify search orientation setup and interpolation was carried out in unfolded space. Blocks (and their sub-cells) are treated as sub-cells within a larger panel that is estimated as a parent cell (30 m x 5 m x 10 m). The unfolded plane for each domain is its footwall, so all the blocks and data line up east-west and vertically; this also removes the effect of the faults and makes all the data available for estimation rather than small subsets within the faulted areas.</p> <p>The unfolding projection is in a north-south sense onto the footwall of each domain, and fore-shortens the distance from 100 m sections in the main infill central area to 70 m - 90 m; a 30 m along strike panel size is appropriate on this case. The variography is also carried out in unfolded space, so spatial relationships are properly maintained in setting up the kriging weighting factors. Variables estimated were: DTR, Magnetite, Fe, SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub>, MnO, CaO, P, S, MgO, K<sub>2</sub>O, Na<sub>2</sub>O, LOI, Cu and Zn.</p> <p>Drill hole section spacing is generally 200 m by 50 m, with infill lines at 100 m in the central parts of the Razorback deposit. The resource has been classified in the Indicated and Inferred categories in accordance with the 2012 JORC Code. Classification is based on a combination of drill hole spacing and kriging output parameters (including number of samples and holes used in estimation, average distance to samples, kriging variance etc).</p> <p>A minor adjustment was made to the Razorback model used as the basis for the Ore Reserve prior to reporting the Mineral Resource, but this adjustment was to the base of the Inferred Mineral Resources only, and hence not relevant to the PFS as only the Indicated Mineral Resources have been used and reported.</p> <p>The Mineral Resources are inclusive of the Ore Reserve.</p>

Criteria	JORC Code Explanation	Commentary
Site visits	<p>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</p> <p>If no site visits have been undertaken indicate why this is the case.</p>	<p>The competent person visited site in December 2021. The full area of the pit, plant and proposed rail load out were visited. No potentially significant issues were noted.</p>
Study status	<p>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</p> <p>The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</p>	<p>The Ore Reserve is supported by a Pre-Feasibility level study compiled by Magnetite Mines Limited. Including contributions from specialist consultants:</p> <ul style="list-style-type: none"> <li>• Widenbar Associates – Mineral Resource estimate</li> <li>• Hatch/Bureau Veritas - Geometallurgical and mineralogical testwork (basis for plant design)</li> <li>• Hatch – Mineral Processing and Tailings design – AACE Class 3 Estimate</li> <li>• AMC – Pit optimisation, Mine design, scheduling and mining cost estimation.</li> <li>• Eco Logical Australia – Permitting and approvals, baseline environmental assessments, hydrogeological and borefield design studies.</li> <li>• GHD – Non-Process Site Infrastructure, human resourcing</li> <li>• Electranet/GHD - Power and electrical studies</li> <li>• GHD – Transport and haul road studies</li> <li>• SIMEC – Port usage proposal</li> </ul> <p>The results of the Optimisation/Prefeasibility study are expected to be released in March 2023</p>

<p><b>Cut-off parameters</b></p>	<p>The basis of the cut-off grade(s) or quality parameters applied.</p>	<p>An economic break-even cut-off calculation is defined as:</p> $\text{Cut-off grade} = \frac{\text{Processing costs}}{(\text{Net Commodity Price} \times \text{Process Recovery}(\%))}$ <p>The final open pit optimisation modifying factors utilised to calculate the breakeven cut-off grade for the Ore Reserve estimate were:</p> <ul style="list-style-type: none"> <li>• Processing cost = A\$5.42/t ore</li> <li>• Price (CFR destination incl. premium) = A\$227.80/t</li> <li>• Transport and shipping cost = A\$42.15</li> <li>• Royalties (@ 6.25% of Mine Gate Price i.e. price – transport) = A\$11.60</li> <li>• Net Commodity Price = A\$174.05/t concentrate</li> <li>• Recovery = 97%</li> </ul> $\begin{aligned} \Rightarrow \text{Breakeven cut-off grade (eDTR\%)} &= \frac{\$5.42}{\$174.05 \times 97\%} \\ &= 3.21\% \text{ eDTR} \end{aligned}$ <p>The Ore Reserve is based on an 8% eDTR (Estimated Davis Tube Recovery). The grade tonnage curves illustrate that there is little mineralisation below this grade. 8% is significantly above the breakeven cut-off grade calculated from the base case parameters.</p>
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Criteria	JORC Code Explanation	Commentary															
<b>Mining factors or assumptions</b>	<p>The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).</p> <p>The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.</p> <p>The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.</p> <p>The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).</p> <p>The mining dilution factors used.</p> <p>The mining recovery factors used.</p> <p>Any minimum mining widths used.</p> <p>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</p> <p>The infrastructure requirements of the selected mining methods.</p>	<p>Razorback is large very low strip ratio project (Waste:Ore average 0.4 with a number of early stages less than 0.2). The proposed mining operation is based on a conventional open pit truck and shovel operation utilising 400t face shovels loading 180t trucks supported by appropriate drilling and ancillary equipment.</p> <p>The rock is hard and it has been assumed that all material will require blasting with powder factors around 0.8 kt/t.</p> <p>Mining will be on 10m benches and grade control will be based on dedicated holes drilled ahead of production. The data will be gathered ahead of blast design allowing discrete ore and waste blasts to be designed. This will minimise dilution and ore loss.</p> <p>The mineralisation was diluted by consolidating the material across strike based 15m minimum ore and waste widths and achieving an 8% minimum grade. Because of the large homogenous nature of the mineralisation with limited internal waste, the dilution and ore loss is low at 3.3% and 2.0% respectively. The dilution process led to inclusion of a small amount of Inferred Mineral Resource and unclassified material, this represents approximately 1% of the Ore Reserve and is not material.</p> <p>Slope designs are based on PFS standard work completed by Golder Associates in 2013 and reviewed by AMC in 2022. Because of the low strip ratio the deposit is not sensitive to overall wall angle. The recommended slope angles are shown in the table below.</p> <table border="1"> <thead> <tr> <th></th><th>Foot wall</th><th>Hanging wall</th></tr> </thead> <tbody> <tr> <td>Batter slope angle (BSA) (degrees)</td><td>70</td><td>75</td></tr> <tr> <td>Berm width (m)</td><td>8.5</td><td>8.5</td></tr> <tr> <td>Batter slope height (m)</td><td>20</td><td>20</td></tr> <tr> <td>Inter ramp angle (IRA)</td><td>52</td><td>55</td></tr> </tbody> </table> <p>The final designs utilised 8m berms. This gave a slight steepening of the walls which is not material to the Ore Reserve given the strip ratio, project life and insensitivity of the designs to overall wall angle.</p> <p>Lersch-Grossman (LG) analysis identified that applying the base case parameters all the Indicated Mineral Resources could be economically extracted, and when the Inferred Mineral Resource were included the economic shells mined significantly deeper. LG analysis testing sensitivity to changes in revenue, cost and overall slope angle identified that the size of the shell was relatively insensitive to changes in these parameters. Based on this, pits were designed which extracted the full Indicated Mineral Resource.</p> <p>The Razorback pit has been designed with thirteen stages commencing in the centre and centre east areas. These sections then consolidate before pushing out to east and west to reach the ultimate pit limits.</p>		Foot wall	Hanging wall	Batter slope angle (BSA) (degrees)	70	75	Berm width (m)	8.5	8.5	Batter slope height (m)	20	20	Inter ramp angle (IRA)	52	55
	Foot wall	Hanging wall															
Batter slope angle (BSA) (degrees)	70	75															
Berm width (m)	8.5	8.5															
Batter slope height (m)	20	20															
Inter ramp angle (IRA)	52	55															



Criteria	JORC Code Explanation	Commentary
		<p>The designs are based on:</p> <ul style="list-style-type: none"> <li>• Ramps 30m wide at 10% gradient</li> <li>• Minimum mining width 70m to 100m</li> </ul> <p>The schedule limited bench turnover rates to 8 benches per annum in a stage. Achieving the required 5Mt of concentrate per year from a maximum of 38Mt of feed required mining of between 40Mt and 70Mt pa. With the large size of the deposit the operation will not be mine constrained, allowing the operation to focus on efficient cost-effective operations.</p> <p>Waste storage has been designed with sufficient capacity for all the waste mined from the Ore Reserve pit.</p> <p>The key infrastructure for the truck and shovel method selected are:</p> <ul style="list-style-type: none"> <li>• ROM pad, high grade and low-grade stockpiles.</li> <li>• Magazine and bulk explosives storage facility.</li> <li>• Heavy and light vehicle maintenance workshop.</li> <li>• Mine administration area including offices, crib rooms and training rooms.</li> <li>• Fuel farm.</li> <li>• Camp accommodation for mine workers.</li> <li>• Water bore field for both concentrator requirements and the mine dust suppression requirements that cannot be supplied by pit water.</li> <li>• Power lines and on-site transformers and switches for the supply of power to the workshop, offices and camp.</li> <li>• Roads, including mine access roads, ore haul roads (from pit to concentrator) and product haul roads (from concentrator to rail loading area)</li> </ul> <p>Inferred Resources within the pit design have not been considered as part of the Ore Reserve estimate, in line with the JORC 2012 guidelines. Potential upside in near surface mineralisation currently classified as Inferred exists and recommended for further resource definition.</p>

Criteria	JORC Code Explanation	Commentary
<b>Metallurgical factors or assumptions</b>	<p>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</p> <p>Whether the metallurgical process is well-tested technology or novel in nature.</p> <p>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</p> <p>Any assumptions or allowances made for deleterious elements.</p> <p>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</p> <p>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications.</p>	<p>The proposed flow sheet includes:</p> <ul style="list-style-type: none"> <li>• Two stages of crushing followed by primary grinding.</li> <li>• Rougher Magnetic separation producing an initial concentrate.</li> <li>• Secondary grinding.</li> <li>• Secondary magnetic separation producing concentrate and tail.</li> <li>• The concentrate is floated and the flotation concentrate is sent to fine grinding.</li> <li>• The flotation tailings is part of the final product</li> <li>• The fine ground material flows to the cleaner magnetic separator.</li> <li>• The flotation tailings and cleaner magnetic separator concentrates are combined, dewatered and filtered to produce the final concentrate.</li> </ul> <p>This process is appropriate for the type of mineralisation and is based on well-tested technology.</p> <p>Samples were selected from the 5-10 year feed horizon. A total of 34 samples were selected for comminution, 30 samples for variability testwork and 3 samples for bulk programs. The samples were new and existing drill core and material collected from the adit. Samples were selected from 4m intervals with all material included in the sample, except for the bulk samples, where larger selections were made for mass purposes. All samples submitted for testwork intersected mineralisation within the proposed pitshells for the Razorback deposit and within both oxidised and fresh mineralisation as given in the 5-10 year feed horizons. Both smaller and larger (bulk) samples contained a variety of spatially distributed host lithologies primarily composed of bedded, interbedded/laminated and tillitic ironstone as per local stratigraphy and per internal domaining in block modelling.</p> <p>No significant deleterious elements have been identified</p> <p>Three bulk samples were collected for localised variation and flowsheet validation work was carried out with vendor equipment. The entire proposed flowsheet was validated with each of the three samples.</p> <p>Magnetic minerals inclusive of magnetite and mag-hemite/martite were targeted as part of the metallurgical testwork program owing to their magnetic properties as utilised in magnetic separation. Residual iron species such as hematite is present within concentrate products as a result of textural associations and entrainment with little to no effect in product specification nor pricing</p> <p>Test work illustrated a strong correlation between the model eDTR estimates and lab mass recoveries. This analysis supports use of a 97% recovery of the estimated eDTR grades to a 68.5% Fe concentrate the Ore Reserve is based on.</p>
<b>Environmental</b>	<p>The status of studies of potential environmental impacts of the mining and processing operation.</p>	<p>The appraisal of potential environmental impacts resulting from mining and/or processing operations encompasses a two-stage approach – firstly, the quantification and qualification of existing environmental conditions (or baseline studies), and the completion of an environmental impact assessment.</p> <p>Baseline environmental studies have commenced for all principal study areas. Primary field ecology surveys (flora, fauna, ecosystems) are complete, with final targeted surveys planned. Detailed desktop reviews for groundwater, surface water, soils, air quality and noise investigations have all commenced and will be completed in the coming months.</p>

Criteria	JORC Code Explanation	Commentary
		<p>While formal impact assessment has not yet commenced, a risk and opportunities assessment of baseline study results to date indicate:</p> <ul style="list-style-type: none"> <li>• there is limited potential for listed species to be present in the Project area; final field surveys will confirm whether management strategies are required to adequately protect any species of significance</li> <li>• there are several potential aquifer systems (of varying quality) that may be accessible to the Company; regional groundwater use is limited to stock and domestic applications, with some ecosystem use likely from smaller, shallow groundwater systems</li> <li>• existing regional profiles for soil, noise and air quality conditions are available, and form the basis of baseline condition quantification.</li> </ul> <p>Following completion of the baseline studies, and once an optimised Project has been established, environmental impact assessment will be completed to establish any potential impacts and the management / mitigation strategies to be adopted during construction and / or operations.</p>

Criteria	JORC Code Explanation	Commentary
	Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	An initial 2012 acid-rock drainage study examined the characteristics of selected samples of hanging wall and footwall rocks, magnetite ore and low-grade ore. Of the 13 samples tested, seven (including a duplicate sample) were classified as acid consuming material (ACM) and six samples were classified as non-acid forming (NAF) indicating that ARD is highly unlikely to occur. On the basis of these initial test results, it is considered that there is negligible potential for ARD conditions to be developed at the Razorback Project (based on initial mineralization and waste zone types and extent).
<b>Infrastructure</b>	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	<p>No infrastructure currently exists at site. Land required for the project development is currently held in pastoral lease or Crown Perpetual Lease. Mine infrastructure (excluding haul road and power line) will situate within the mining lease or an associated licence area under the <i>SA Mining Act 1971</i>.</p> <p>A power line will be required from the appropriate ElectraNet substation to the concentrator. The planned route is approximately 130km and will require land access agreements and a licence under the <i>SA Mining Act 1971</i>.</p> <p>A water bore field will be required for construction purposes with remaining process make up water produced from a coastal desalination plant with pipeline delivery to the mine site. All prospective drilling for the bore field is to the south and east of the and are partially within the mining lease extents. Where the bore field extends outside of the mining lease, land access agreements and a licence under the <i>SA Mining Act 1971</i> will be required. The bore field will initially be supplied with power from diesel generators.</p> <p>A haul road for concentrate will be required from the concentrator to the rail loading facility. The concentrate haul road will provide access to site from the Barrier Highway under all conditions except major flooding and will double as the mine access for workers and supplies. The planned route is approximately 50km and will require land acquisition or agreements, and a licence under the <i>SA Mining Act 1971</i>. The train loading facility will require land acquisition or agreements as part of the haul road arrangement and a licence under the <i>SA Mining Act 1971</i>.</p> <p>The mine accommodation will be accessed from the concentrate haul road, approximately 5km from the concentrator, on the mine lease. Communications with the village and site will be via a 4G booster tower.</p> <p>South Australia has an extensive mining history and a well-established, highly skilled workforce. The South Australian energy and mining sector employs more than 41,000 people, providing a large pool of skilled project development and operations staff. Significant capacity exists within South Australian training institutions to maintain a capable and accessible workforce, and Government-supported training programs (apprenticeships, traineeships, industry initiatives) are readily accessible.</p>
<b>Costs</b>	The derivation of, or assumptions made, regarding projected capital costs in the study.	<p>AMC Consultants developed mining operating and capital cost from first principles.</p> <p>Hatch Australia have provided capital costs for the concentrator and associated tailings disposal.</p>

Criteria	JORC Code Explanation	Commentary
		<p>GHD have provided capital costs estimate templates for:</p> <ul style="list-style-type: none"> <li>• Camp accommodation (with support from Ausco Australia).</li> <li>• Mine administration area including offices (with support from Ausco Australia).</li> <li>• Heavy Vehicle and Light Vehicle maintenance facilities, wash down bays and tire change facilities.</li> <li>• Warehouse and stores facilities.</li> <li>• Mine supporting site civil infrastructure.</li> <li>• Potable water and waste water facilities.</li> <li>• Water bore field</li> </ul> <p>GHD have provided capital cost estimates for the power line.</p> <p>Labour costs used in the study have been guided by inputs from:</p> <ul style="list-style-type: none"> <li>• WorkPac South Australia</li> <li>• Hatch Australia</li> <li>• AMC</li> </ul> <p>Concentrate haul road capital cost have been provided by GHD</p> <p>The capital costs that have been absorbed into operating costs are:</p> <ul style="list-style-type: none"> <li>• Magazine and bulk explosives storage facilities.</li> <li>• Concentrate haul trucks.</li> <li>• Concentrate haul road maintenance equipment.</li> <li>• Locomotive and rail wagons.</li> <li>• Mining Support equipment and light vehicles</li> </ul>
	The methodology used to estimate operating costs.	<p>Mining operating costs have been developed from a first-principle basis utilising:</p> <ul style="list-style-type: none"> <li>• Up-to-date equipment costs (capital and operating) from OEMs</li> <li>• Current salary and labour rates based on 2:1 week rosters</li> <li>• Blasting assumed 0.93kg/bcm powder factors and used recent vendor estimates of explosive costs</li> <li>• Diesel cost of \$1.17/l was used</li> </ul> <p>Mining costs were calculated for the following activities:</p> <ul style="list-style-type: none"> <li>• Clearing and grubbing</li> <li>• Topsoil removal and storage</li> <li>• Road building</li> <li>• Drilling and blasting</li> <li>• Loading and hauling (including support equipment)</li> </ul>



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		<ul style="list-style-type: none"> <li>Personnel including operational and maintenance, technical and management/supervision are included in the site administration cost</li> <li>Rehabilitation and closure allowance</li> </ul> <p>The resulting LOM cost is approximately \$3.71/tonne ex-pit inclusive of capital.</p> <p>Processing costs have been estimated to a Class 4 level by Hatch Australia based on the plant design and detailed costings. This includes, but is not limited to, estimates for:</p> <ul style="list-style-type: none"> <li>Labour</li> <li>Power reticulation</li> <li>Water reticulation</li> <li>Reagents</li> <li>Consumables</li> <li>Maintenance parts</li> <li>Site and corporate general and administrative costs</li> </ul> <p>Operating costs related to Non-Process Infrastructure (e.g. accommodation etc) was completed by GHD</p> <ul style="list-style-type: none"> <li>Accommodation</li> <li>Maintenance facilities</li> <li>Services – Waste water and power reticulation</li> </ul> <p>Off-site costs related to product transport have been adjusted for diesel and volume from quotes received from Bis Industries and Aurizon and SIMEC provided pricing for port handling and transshipping.</p>
	Allowances made for the content of deleterious elements.	Not applicable
	The source of exchange rates used in the study.	The exchange rates were sourced from publicly available data and were based on a forward view developed internally by Magnetite Mines
	Derivation of transportation charges.	Shipping costs were derived from historical rates, FOB from Whyalla to Qingdao. The earliest of these rates sources were from February 2014.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Processing and refining costs have been derived by Hatch Australia based on their design of the processing plant.

Criteria	JORC Code Explanation	Commentary
	The allowances made for royalties payable, both Government and private.	<p>Allowances made for royalties payable include:</p> <ul style="list-style-type: none"> <li>Government: 5% of profit as determined by Department of Energy and Mines (DEM) schedule of royalties and rates</li> <li>Vendor: 1% royalty over mine profit payable to the vendor of the exploration licenses (Mintech Resources). A vendor royalty of A\$6 million has been included upon commencement of mining.</li> <li>Native Title/Traditional Owners: An allowance of 0.25% royalty has been assumed.</li> </ul> <p>All royalties are based on the value of the product produced at the 'mine gate'.</p>
<b>Revenue factors</b>	<p>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.</p> <p>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</p>	<p>Head grade has been calculated in the Mining Reserve using:</p> <ul style="list-style-type: none"> <li>An eDTR to Mass Recovery conversion factor of 97%. This is based on bench scale flow sheet simulations.</li> <li>Ore dilution is 3.3%. This is a function of consolidating blocks in the geological model.</li> <li>Ore loss is 2.0%. This is a function of consolidating blocks in the geological model.</li> </ul> <p>Revenue is derived from a 62% Fe fines CFR price of US\$115/tonne. This is based on a 10 year average from December 2022 backwards, adjusted by Annual US headline CPI. The dry product grade was 68.5% Fe. An additional premium of \$39.9/t was assumed for the grade over the 62% Fe benchmark. This premium was based on extrapolating the average annual premium of the 65% Fe Fines price (over the 62% benchmark) for the last 5 years (to December 2022). A 5 year average was used instead of the 10 year due to the lack of volume in the 65% Fe Fines index in the early years (the index began in 2013).</p> <p>For all revenue inputs, the exchange rate used was AU\$:US\$ 0.68.</p>
<b>Market assessment</b>	<p>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</p> <p>A customer and competitor analysis along with the identification of likely market windows for the product.</p>	<p>Steel is the most widely used metal in modern society. It is the key structural component in all large civil infrastructure and all transport infrastructure, except for aircraft.</p> <p>Recent growth in steel use has been driven by industrialisation in China. Future growth is expected to be driven by two themes:</p> <ol style="list-style-type: none"> <li>The industrialisation of developing countries, in particular India and south-east Asia.</li> <li>The overhaul of energy generation and transmission infrastructure in the developed world.</li> </ol> <p>Global steel production is presently dominated by China, at over 1000Mt crude steel in 2020 (Commonwealth Department of Industry, Innovation and Science (IIS) "Resources and Energy Quarterly March 2021") produced from high cost, small scale domestic production and 1,170Mt of iron ore imports (RMG Consulting 2021). Indian iron ore imports are expected to grow as the government targets a doubling of steel production from 154Mt to 300Mt between 2022 and 2032.</p>

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	<p>Price and volume forecasts and the basis for these forecasts.</p> <p>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</p>	<p>Razorback product is a high-grade concentrate that is expected to be attractive to blend at low levels into sinter feed, 'sweetening' sinter quality, or blast furnace pellet production. Product grade is expected to average 68.5% Fe, with alumina at less than 0.4% and the balance mostly silica. The Fe grade and Al grade are DR pellet specification (Liming Lu, 2022), while the concentrate has the right size fraction and a favourable Blaine index for pelletisation without any prior treatment.</p> <p>As a 'headline' grade, 68.5% compares favourably to other concentrates such as Anglo's Minas Rio BF product (66-67% Fe) or Champion Iron's Bloom Lake product at 66.5%, both of which have achieved substantial sales at premium prices that are considerably higher than the major fines brands.</p> <p>Actual pricing of Razorback material will depend on a range of attributes as well as iron. The concentrate will be relatively fine, but not unusually so compared to other concentrate products. Phosphorus levels are very low, which is an increasing advantage as Pilbara phosphorus levels appear to be trending up.</p>
Economic	<p>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.</p> <p>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</p>	<p>The economic analysis undertaken to determine the Ore Reserve used a discount rate of 8%. There is no account for inflation in revenue calculations or operating costs. No sensitivity analysis has been undertaken within the financial model.</p> <p>A conservative approach of 20% contingency on all capital expenditure has been taken.</p>
Social	<p>The status of agreements with key stakeholders and matters leading to social licence to operate.</p>	<p>The Project sits within the Ngadjuri Nation #2 Native Title Claim (ref SC2011/002) area, which was accepted for registration in 2012. The resolution of this claim is anticipated prior to the end of 2021 where it is expected that Native Title will be granted. The determination of the Native Title provides the most-suitable opportunity to commence an agreement-making process with Ngadjuri representatives that satisfies the requirements of the <i>SA Mining Act 1971</i>.</p> <p>It is expected that either a mining agreement pursuant to the SA Mining Act 1971 or an Indigenous Land Use Agreement under the Commonwealth Native Title Act 1993 will be entered into. Frameworks for each process are well-formed, and extensive support is available from local Native Title lawyers and service providers to ensure fair, robust and meaningful negotiations and outcomes for both parties.</p> <p>The mine, plant and other infrastructure principally exist within Pastoral leases and Crown Perpetual leases. These are established by separate legislation and administered by the South Australian Government. Principal tenure for the project is established by licences granted under the SA Mining Act 1971 but requires an agreement with the leaseholder of a Pastoral or Perpetual lease to be exercised. Planning for these agreements has commenced, with initial discussions commenced with leaseholders in the mining area.</p>

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Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:	No material naturally occurring risks have been identified. Severe weather including the risk of flooding will not completely cease operations for an extended period of time with supporting infrastructure designed with flood immunity in mind and avoiding major water courses. The mine and mine support operations exist in a low seismic activity zone.
	Any identified material naturally occurring risks.	No material legal or marketing agreements have been entered into.
	The status of material legal agreements and marketing arrangements.	In South Australia, mineral resources are the property of the Crown. The South Australian Government, through the <i>SA Mining Act 1971</i> , issues tenements to companies to provide rights to explore for and extract mineral resources. Magnetite Mines holds exploration rights to the Razorback Iron Project through Exploration Licences (ELs). The rights inferred under these licences can support a range of other activities required during the prefeasibility and definite feasibility study programs. The right to mine is awarded with the granting of a Mining Lease.
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	Combined the Company holds 1,520km <sup>2</sup> of tenure as related to the Razorback Iron Project. The deposits associated with the Razorback Iron Project are located primarily on the EL6353 and EL6126 tenements, while infrastructure may also extend into EL6127 and EL5902.
		Magnetite Mines has registered its intention with the South Australian Government to undertake the Mining Lease application process for the Project. A Case Manager has been designated by the South Australian Government to provide support and facilitation through the established approvals and permitting processes. Early engagement with government mining and other technical specialists has commenced and demonstrate a clear support for the project. A project approvals schedule is being developed between the Company and the South Australian Government.
		Eco Logical Australia has been engaged to prepare application documentation. The South Australian Government provides clear requirements on the application process and scope of information to be provided to ensure a robust planning and assessment process. A review against these requirements demonstrates that the development and provision of such information to form the mining lease application is readily achievable.
		Baseline environmental studies are well-advanced and will be reviewed by Government stakeholders as part of an iterative process to ensure alignment to necessary standards and other expectations.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	As the Mineral Resource for the Razorback Iron Project consists of JORC (2012) Indicated and Inferred resources, a portion of the Indicated Resources have been converted to Probable Reserves. As noted, this Ore reserve does not include material from the Iron Peak deposit as insufficient work has been undertaken to inform Ore Reserve declaration for that deposit, owing to its recent inclusion in the Mineral Resource Estimate.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The Ore Reserve is based solely on Indicated Mineral Resources and is hence all classified as a Probable Ore Reserve.  The estimated Ore Reserves are, in the opinion of the Competent Person, appropriate for these deposits.

Criteria	JORC Code Explanation	Commentary
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	Not applicable
<b>Audits or reviews</b>	The results of any audits or reviews of Ore Reserve estimates.	No third-party audits have been undertaken. AMC have performed their usual internal peer review of the mining aspects supporting the PFS.