ASX ANNOUNCEMENT

1 SEPTEMBER 2023

RAZORBACK IRON ORE PROJECT UPDATE

Highlights:

- **Definitive Feasibility Study for optimised 5Mtpa base case targeted for completion in 2024**
- **Value Engineering in progress to deliver significant cost reductions prior to DFS completion**
- **Saline water processing under investigation; potential to reduce costs and simplify permitting**
- **Native Title negotiations to commence in September 2023**
- **Mining Lease Proposal to be lodged with South Australian government in Q1 2024**
- **Talks progressing with potential partners attracted to Razorback's green iron potential**

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MGT CEO Tim Dobson commented:

"Since we announced the optimised 5Mtpa base case for development of our world-class, 100%-owned Razorback Iron Ore Project in March 2023, the MGT team has been refining all aspects of the Project with the objective of delivering a Definitive Feasibility Study suitable for a final investment decision. Our attention has focused on de-risking key infrastructure elements and identifying material cost reductions via value engineering to further improve the Project's economics before we complete cost intensive, DFS-level engineering. We are also advancing permitting and Native Title agreement making.

"The optimisation of Razorback to a high-value, long-life, operation at an initial operational scale of 5Mtpa has been well received by potential strategic partners and customers. We recently updated our virtual data room to include all the information relating to the optimised base case, allowing selected parties to complete due diligence on Razorback's new configuration ahead of transactional discussions.

"We are observing ever-increasing momentum towards a green steel future and have been working closely with the South Australian Government to establish a common vision for the establishment of 'green iron' production hubs in the State. Our objective is to time the delivery of Razorback to meet the emerging international investment opportunity and to supply the forecast demand for premium-grade iron ore products required by the decarbonising steel industry.

"I am pleased with the progress we are making for what will be a world-scale iron ore project. I look forward to updating shareholders as we diligently progress the completion of a DFS for Razorback."

Magnetite Mines Limited (ASX: MGT) (**MGT** or **Company**) is pleased to provide an update on its 100%-owned Razorback Iron Ore Project (Razorback or Project), in South Australia's Braemar Iron Province.

The Company is completing a suite of high-value workstreams that have identified significant cost savings and validated infrastructure options (collectively Value Engineering[1]) in preparation for completion of the Definitive Feasibility Study over the course of 2024. Key workstreams underway include:

- **Water supply**: Option confirmation, pipeline alignment and permitting pathway
- **Power supply**: High-voltage transmission alignment, offtake capacity and confirmation
- **Land access**: Land access agreements for enabling infrastructure including haul road, electricity transmission and water supply pipeline

Project approvals are also being advanced, with work in progress paving the way for the submission of a Mining Lease Proposal in Q1 2024. In parallel, a partnering agreement with the Ngadjuri Nation, the Traditional Owners on whose land Razorback is situated, is almost complete ahead of the start of Native Title agreement negotiations.

A timeline of recent Razorback project achievements and scheduled milestones is shown in Figure 1.

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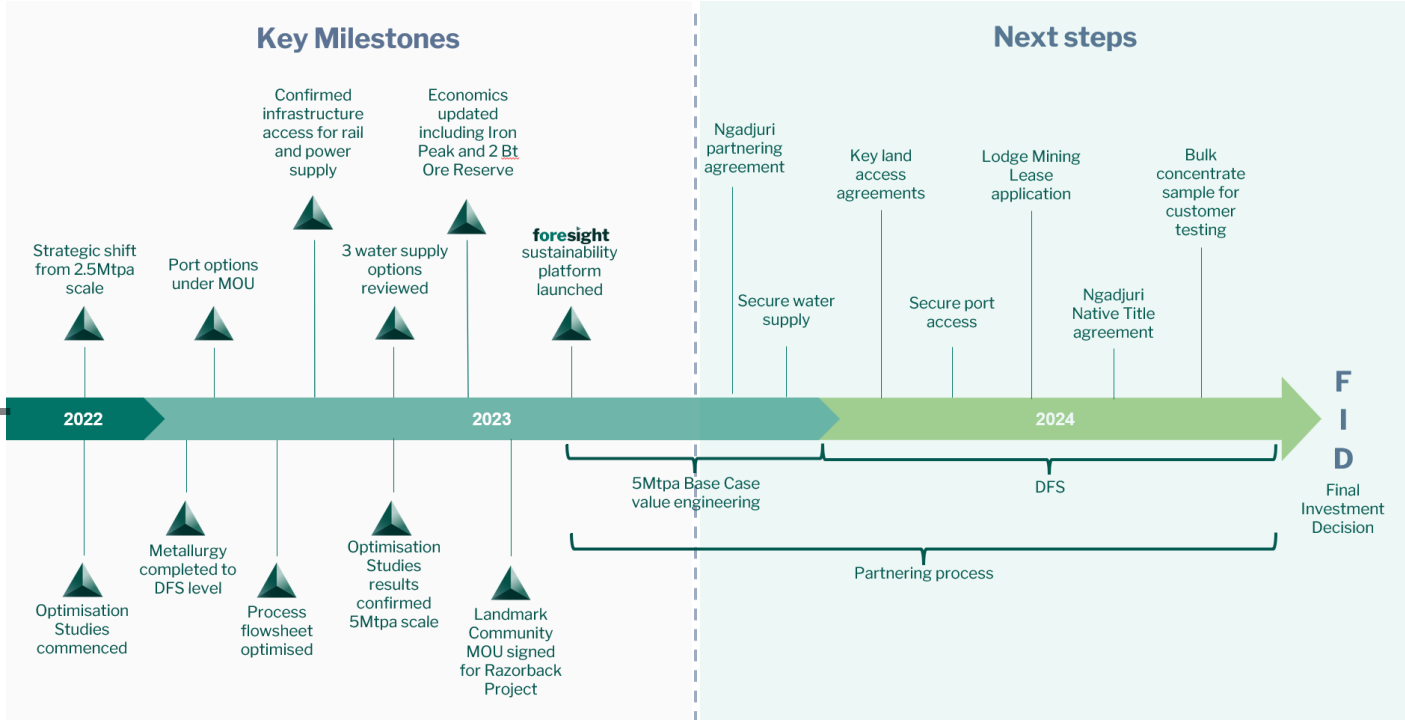

Figure 1 – Razorback Iron Ore Project completed milestones and planned workstreams

Definitive Feasibility Study (DFS)

Following completion of the Value Engineering studies later this year, Magnetite Mines intends to complete a comprehensive DFS for an initial 5Mtpa production configuration to a level that will support a final investment decision. This will include engineering to DFS-level accuracy across all aspects of the Project and its enabling infrastructure, government approvals, permitting, port access, land access and Native Title agreements. The timing of some components of this work is subject to third party processes

(e.g., government approvals) and the Company will clarify completion timing for these activities once they become evident.

Magnetite Mines anticipates a compressed timeline to complete DFS-level engineering given the significant work already completed to DFS-level accuracy including:

- Geological modelling, Indicated & Inferred Mineral Resource Estimate and Probable Ore Reserve all defined to JORC 2012 standards and guidelines[2,3].
- Metallurgical test work and process flow sheet development – incorporating a large suite of bench and pilot-scale test work programs on spatially distributed samples representing early mine life plant feed from both Iron Peak and Razorback deposits[4,5].
- Process plant and design – much of the current processing plant design has been completed to AACE class 3 level of accuracy (DFS level)[6,7].

Detailed DFS-level engineering is planned to resume in Q1 2024 and will bring all elements of the Project to AACE Class 3 or equivalent levels of accuracy, with completion scheduled in H2 2024, subject to appropriate funding.

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Value Engineering

Magnetite Mines is completing a suite of high-value workstreams that have identified significant cost savings and validated infrastructure options (collectively Value Engineering).

The Company is focused on confirming key enabling infrastructure items to a high level of confidence prior to completing the DFS. The increase in production scope to initial 5Mtpa (Base Case) requires updated solutions to both water and power supply[7]. The intention is to optimise technical solutions and provide a comprehensive permitting and approvals pathway for water and power supplies, de-risking these critical infrastructure items. Key workstreams include:

Water: At 5Mtpa production, an estimated 10Gl per year of make-up water is required for ore processing[7]. The Company is assessing two water supply options: Coastal Water and Murray Basin Wastewater.

Opportunity: A key optimisation for this workstream is to test the ability of the current flowsheet to process concentrates using saline water. If proven, the use of saline water in processing would obviate the need for large-scale desalination at the coast, a significant reduction in Project capital and simplification of the permitting and approvals pathway. A test work program has been commissioned to test the response of saline water in processing from both the coast (sea water) and Murray River wastewater offtake samples. Initially, flotation performance will be tested followed by a final wash test work program to remove chlorides from the final concentrate. Pending these results, the technical solution for water offtake will be finalised.

Both water supply options require the construction of a pipeline from their source locations, with key risks are related to permitting and routing of either pipeline. However, there are good precedents for these options given alignment of existing pipelines along road reserves across the state.

A key advantage of the Coastal Water option is the ability to provide water for all scales of production with expanded pipeline specifications due to the unlimited resource at source (sea water). Technical studies for the design and costing of the water pipeline have been completed to AACE Class 4 level of accuracy. However, some optimisation regarding alignment and the location of distributed pump stations is required and incorporated into the Value Engineering work program.

The Murray Basin Wastewater option seeks to utilise wastewater derived from salinity management schemes along the South Australian sector of the Murray River. Brackish groundwater is extracted via bore pumps in several scheme area to prevent rising salinity levels in the river, with disposal via evaporation in a basin southeast of Morgan. The schemes can produce up to 12Gl/a of water for disposal and, with no current beneficial use, this large, reliable water resource is suitable for industrial-scale offtake.

The Company has advanced consideration of this option due to the known volume of water available, supporting Stage 1 production requirements, and the attractive sustainability proposition of using a current wastewater stream for a high-value industrial application. The Company formally submitted an Unsolicited Proposal to the South Australian Government in April 2023 seeking access to the wastewater. The Murray Basin Wastewater concept requires Cabinet approval to progress to the next step of the State's Unsolicited Proposal process and is expected to be considered by Cabinet imminently.

Permitting and approvals pathway studies have commenced for both the Coastal Water and Murray Basin Wastewater solutions. This work is inclusive of environmental and permitting due diligence as well as initial contact with local councils, SA Government entities and other stakeholders regarding pipeline routing and land access.

Power: A power load of 140-150MW is anticipated for 5Mtpa production and to date the Company has undertaken power line engineering studies to determine the scope of the High Voltage (HV) power line from the Bundey Sub-Station to the Razorback mine site[7].

A key input required for the Value Engineering study phase, as well as an essential permitting requirement, is the completion of a Connections Options Report (COR) by the State grid operator ElectraNet. The COR aims to outline the technically viable connection options for the Project and consider the broader high-voltage infrastructure requirements. The COR results are expected in Q4 this year and will include consideration of any material stakeholder elements, identification of work required to connect to the Project, and an indicative pricing estimation for the selected transmission line alignment.

Opportunity: ElectraNet released their 2023 Transmission Annual Planning Report in May 2023 that identified the need for priority transmission infrastructure development in SA, including the proposed Mid North Expansion (Northern) project[8]. This project incorporates the development of high-voltage transmission lines from Bundey Substation to the Yunta area (just north of the Razorback Project site) and then to Cultana on the northern Eyre Peninsula.

This expanded grid infrastructure is required to accommodate new renewable energy projects as the State continues its objective of achieving 100% grid-hosted renewable energy generation by 2030, including for forecasted new 'green' hydrogen production and the expected new loads from Braemar mining projects such as Razorback.

MGT is actively engaging with ElectraNet to support their application for the Mid North Expansion (Northern) project and lobby for its approval by the Australian Energy Market Operator (AEMO). AEMO's approval of the proposed project may provide:

- a near-site grid connection opportunity for the Razorback Project, reducing capital and operating costs to the Project;
- increased opportunity for local generation of grid-hosted, low-cost, renewable energy to efficiently reduce Scope 2 emissions; and
- enhanced regional electricity supply reliability for Braemar iron ore producers.

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Project Approvals

MGT has significantly advanced the development approvals program for Razorback and has now progressed to the impact assessment (IA) phase. Securing development approval from the South Australian Government is a critical component of Project de-risking and a precursor to a final investment decision (FID), with the Company prioritising its primary mining approvals program accordingly.

Eco Logical Australia (ELA) has been engaged to develop the necessary application documentation and MGT is targeting submission of Razorback's Mining Lease Proposal (MLP) in Q1 2024. To achieve this timeframe, the Company has elected to decouple water supply approvals to ensure a timely outcome for approval of all mining, processing, power supply, haulage and other ancillary activities.

With this delivery schedule, Magnetite Mines' MLP submission will likely be the first development application to be lodged for an iron ore mine in the massive but undeveloped Braemar Iron Province.

The Company has taken a diligent approach to characterising the Project's operating environment to support a robust MLP process, having commenced longitudinal ecology studies in 2020. With final terrestrial and aquatic ecology surveys completed in August 2023, this comprehensive baseline study program is effectively complete for the MLP scope, subject to IA studies that may identify the need for limited discrete field verification assessments.

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Figure 2 – Bird survey at Razorback Iron Ore Project, August 2023

IA studies are planned to be carried out throughout the remainder of 2023, concurrently with preparation of the MLP documentation. ELA and MGT recently completed a competitive tender process for the

engagement of technical specialists to undertake the IA studies. Complying proposals have been received from a broad range of pre-eminent national and international specialists and this work will be awarded and commenced in the coming weeks.

Strategic Partnering

Interest from the global steel market in Razorback's development is strong. MGT continues to advance discussions with potential partners and customers with the objective of establishing long-term project development and offtake relationships for Razorback. This has included hosting a series of site visits with top-tier global steelmakers and trading houses to allow them to gain further insight into Razorback's scale, quality and development potential.

The Company has updated its virtual data room (VDR) to include full details and outcomes from the Optimisation Studies and new project configuration, which were both completed in March 2023. This process allows potential partners and project investors, subject to the signing of confidentiality agreements, to view and query the Company's information for due diligence purposes.

In response to market enquiries, MGT plans to produce bulk concentrate samples from both the Iron Peak and Razorback deposits for assessment by potential downstream customers.

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Figure 3 – Recent visit to Razorback Iron Ore Project with potential strategic partners

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Native Title Negotiations

Magnetite Mines recognises the Ngadjuri People as the Native Title holders, Traditional Owners and cultural custodians of the Project area. Determination of the Ngadjuri People's Native Title rights was confirmed on 6 July 2023.

The Company has been engaging deeply with the Ngadjuri representative body, the Ngadjuri Nation Aboriginal Corporation (NNAC), and broadened its engagement with a community information session in mid-August.

Figure 4 - Ngadjuri community information session with Magnetite Mines, August 2023

NNAC and MGT have formed a Partnering Agreement as the foundation stone for a respectful, productive and long-term relationship covering Razorback. This Partnering Agreement is nearing completion and will be considered for final approval by the NNAC Board in coming weeks. Once the Partnering Agreement is finalised, MGT aims to formally commence negotiations for a Native Title agreement in September 2023.

Submission for Critical Minerals List

In response to the Federal Government's review of the national Critical Minerals List, Magnetite Mines has lodged a submission advocating for the consideration and inclusion of magnetite[9]. Given the mineral's criticality to the global decarbonisation push and its strategic importance to key partnering nations such as Japan and Korea, the listing of magnetite as a critical mineral is meritorious. It also reflects the unique position Australia holds to supply the region with premium-grade iron ore products for low-carbon iron and steelmaking for generations to come.

The listing of magnetite as a critical mineral would demonstrate Australia's supply commitment to the global low-carbon iron and steelmaking transition and may open opportunities for consideration of government funding and other support or bespoke project facilitation services.

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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 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.

References:

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3. ASX Announcement – 09/02/23 - Iron Peak Mineral Resource Significantly Improved
4. ASX Announcement – 28/02/23 - Metallurgy Confirms Flowsheet and DR Pellet Feed Potential
5. ASX Announcement – 21/12/22 - Peer Review Confirms Razorback Process Plant Design
6. ASX Announcement – 13/09/22 - MGT Transforming To Meet Growing High-Grade Market
7. ASX Announcement – 09/06/23 - Iron Peak Strengthens Razorback Project Economics
8. Transmission Annual Planning Report – ElectraNet
9. Australia's Critical Minerals List: have your say | Department of Industry, Science and Resources