CRITICAL MINERALS GROUP

ASX Announcement

9 November 2023

Revised release of Scoping Study results

Critical Minerals Group Limited **(ASX:CMG**) or **the Company)** is pleased to attach a revised announcement to that released on 1 November 2023 concerning the results of the Scoping Study for its Lindfield Vanadium Project. The attached updated release contains revised and additional information, including a Production Schedule and other relevant information. In regard to its Scoping Study, the Company encourages investors to read and consider this announcement, as well as its historical announcements referred to therein, in full before making any investment decisions regarding the Company's securities.

This announcement was approved for release by the board.

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ASX Announcement

9 November 2023

CMG successfully completes Scoping Study for Flagship Lindfield Vanadium Project

Key Highlights

- **CMG completes a Scoping Study to develop a vanadium mine at its flagship Lindfield Vanadium Project in Julia Creek, QLD.**
- **The Scoping Study supports the conclusion that the Lindfield Vanadium Project has both the practical and financial attributes to develop a successful 4 million tonne per annum ROM vanadium mine producing vanadium pentoxide.**
- **Long Mine life, viable IRR (post tax) and a compelling positive NPV.**
- **The additional High Purity Alumina has also been confirmed as a potential product which could provide future upside for the project.**
- **Site and regional infrastructure and utilities are available to support the development of the vanadium mine.**

Critical Minerals Group Limited **(ASX:CMG, "Critical Minerals Group", "CMG"** or **"the Company")** is pleased to announce that it has completed the Scoping Study for its flagship Lindfield Vanadium Project (**"the Project").** The Scoping Study (**"the Study"**) findings are encouraging and support the conclusion that both the practical and financial attributes exist to develop a successful vanadium mine with a molybdenum trioxide by-product. High Purity Alumina (HPA) has not been included in the financial analysis however, aluminium (III) oxide is present in substantial quantities that produce a 4N grade HPA, which could potentially increase the project returns subject to further analysis of the market. The Scoping Study work highlighted areas of opportunity in the resource with these results planned to be released once the analysis has been completed.

Scoping Study Cautionary Statement

The Scoping Study referred to in this announcement has been undertaken to consider development of the Lindfield Vanadium Project. It is a preliminary technical and economic study of the potential viability of the Lindfield Vanadium Project. It is based on low level technical and economic assessments that are not sufficient to support the estimation of ore reserves. Further

evaluation work and appropriate studies are required before CMG will be in a position to estimate any ore reserves or to provide any assurance of an economic development case.

The Scoping Study is based on the material assumptions outlined below. These include assumptions about the availability of funding. While CMG considers all the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Scoping Study will be achieved.

To achieve the range of outcomes indicated in the Scoping Study, additional funding will be required. CMG has a supportive shareholder base and has successfully raised capital to progress the development in the past. CMG could also potentially qualify for Northern Australia Infrastructure Funding (NAIF) and, with appropriate project credentials, source debt funding through applicable sources. Investors should note that there is no certainty that CMG will be able to raise that amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of CMG's existing shares.

It is also possible that CMG could pursue other 'value realisation' strategies such as a sale, partial sale or joint venture of the Project. If it does, this could materially reduce CMG proportionate ownership of the project.

Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Scoping Study.

What was evaluated

Wave International Pty Ltd (Wave) were engaged by CMG to carry out a Scoping Study of the Lindfield Vanadium Project., prepared within the cost accuracies and ranges of a Class 5 cost estimate type as defined by the Association for the Advancement of Cost Engineering (AACE) (+/-35-50% accuracy). Key contributing factors to this accuracy include beneficiation recoveries, capital cost, and operating costs. The scope of work included undertaking concept level engineering of a greenfields mine, together with associated site infrastructure and process operations, aimed at producing a 98.5% pure vanadium pentoxide (V_2O_5) product, with the further potential to produce 99.99% (4N) pure HPA product and molybdenum trioxide (MoO_3).

The Study produced a project plan and financial model based on typical Australian-based industry inputs, projecting financial returns over the life of the mine, assuming a base case 4 million tonnes per annum (Mtpa) Run of Mine (ROM) mineralised material feed.

The Study included the site-based infrastructure (buildings, roads, water, power, dams, and other associated site infrastructure), and the vanadium processing plant. The plant design will allow for the beneficiation of ROM mineralised material, to produce vanadium pentoxide, and molybdenum trioxide as an additional product. Stantec and Lava Blue, were also engaged to provide a separate evaluation on a potential standalone HPA plant of a nominal production capacity of 4,000 tonnes per year, utilising raffinate bleed from the Vanadium SX plant as feed for the HPA plant.

The Study also included a pit optimisation and mining report prepared by The Measured Group, and a high-level environmental project description and report prepared by Epic Environmental, outlining environmental and permitting requirements for the Project.

A metallurgical test work program was undertaken by CMG to develop a detailed understanding of the nature of the mineralised material, and to establish the design parameters for the process plant. This also assisted in the scoping level design of other site infrastructure, and subsequent capital and operating cost estimates for the Project.

Key findings of the Scoping Study

Mining / Geology

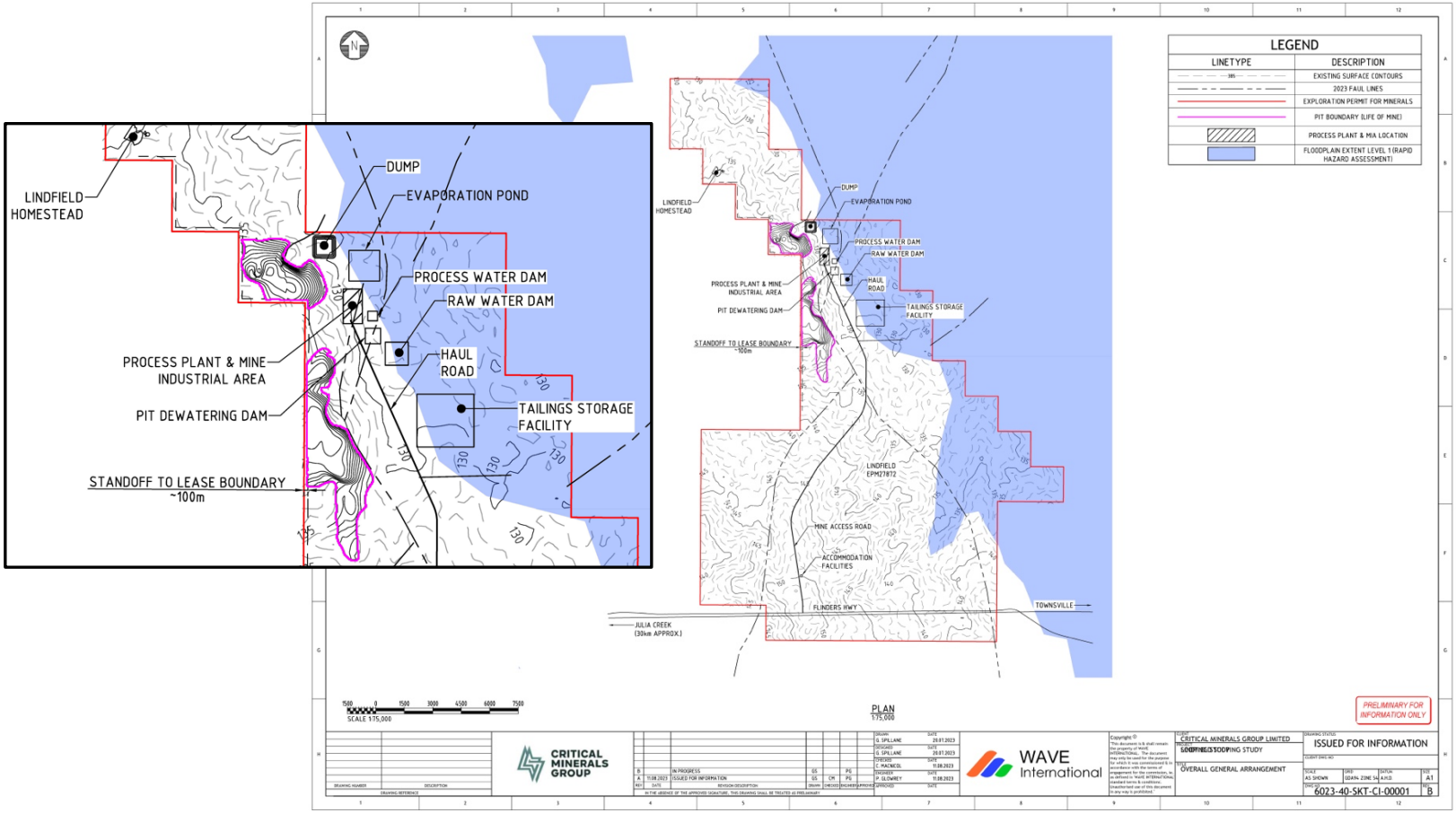
The Scoping Study evaluated a range of ROM production levels from 2 Mtpa to 6 Mtpa, with 4 Mtpa selected as the optimal production level to assess. The mine planning and scheduling focussed on the mid horizon based on Resources as reported in the Mineral Resource Estimate[1], noting that the mid seam is approximately 80% Indicated and 20% Inferred JORC resource. CMG is not aware of any new information subsequent to the 16 May 2023 announcement. Total production of vanadium pentoxide from this design option delivered an average of over 10,500 tonnes per annum, with 550 tonnes per annum of molybdenum trioxide as a by-product. Early processing test work results highlighted that the TLBA horizon (upper horizon), currently excluded from Mineral Resource Estimate (due to its lower in-situ grade), achieved favourable concentrate grades, and as such, has been identified as an area for further analysis.

The Lindfield Deposit has a long life under current assumptions and is shallow and flat lying. Only resources above the base of weathering and above the V_2O_5 cutoff grade are mined and processed. Lindfield homestead is located to the north and mining has avoided proximity to it. The western project limit is the project lease boundary. There is a major north-south trending fault which terminates the deposit to the east. Road and rail infrastructure is located some 15 km to the south. Mining progresses from north to south and accordingly most of the mine and process infrastructure is located to the north of the deposit as shown in Figure 1.

Waste is hauled to an external waste dump for the first 2 years and thereafter as sufficient in-pit dump space becomes available, waste is short hauled in-pit. Beneficiation waste from the plant is backhauled in empty trucks and placed in these mine waste dumps.

[1] Please refer to Company's ASX announcement dated 16 May 2023.

Figure 1 – Lindfield Deposit Project Layout



A typical cross section through the initial mining area is shown in Figure 2.

Figure 2 - Cross Section B: Looking north showing resource and pit limits in the proposed initial mining area to the north of the deposit

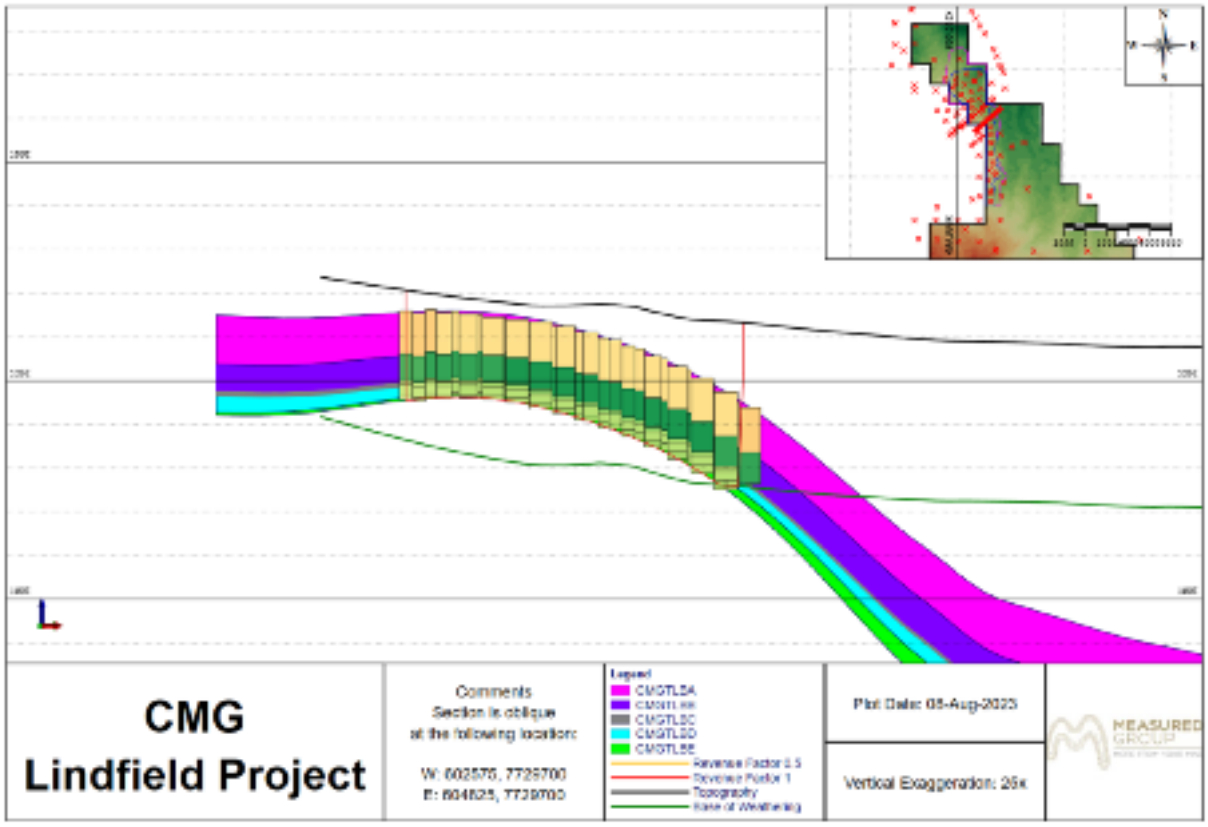


Figure 3 - Drill Hole location plan Lindfield Project May 2023

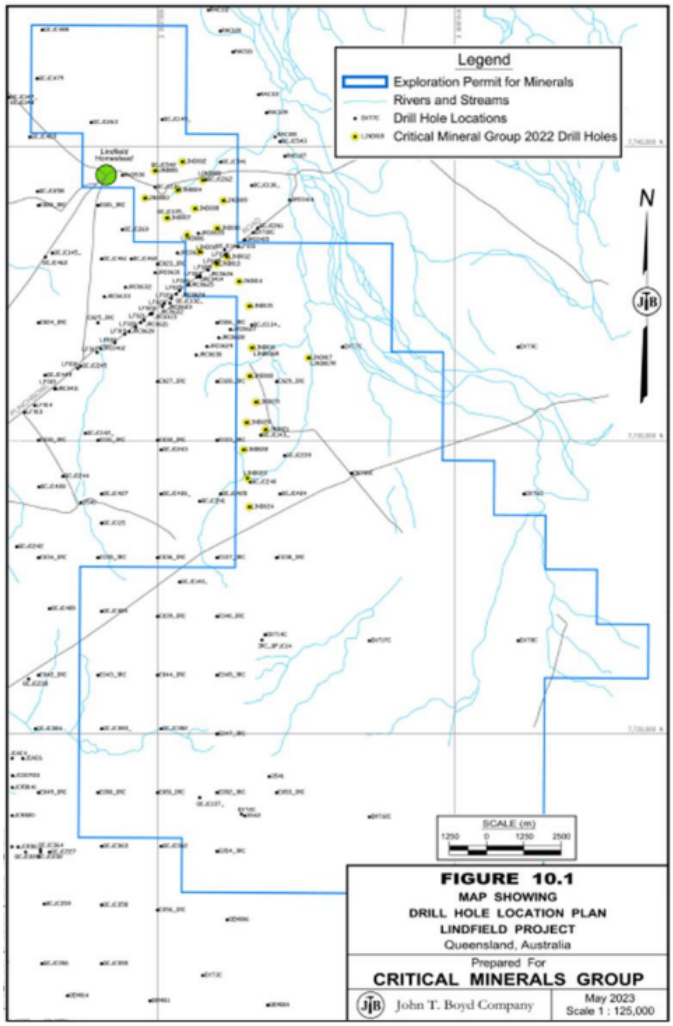


Image 1 - Lindfield drill core

Mining Method

The proposed mining method is conventional truck and shovel open pit bench mining. All mining has been assumed to be free dig with track dozer ripping to support excavators as necessary. The mining fleet comprises five Komatsu PC850 80t excavators with fourteen Caterpillar 740 40t ADT trucks. A 4 cu.m Caterpillar 966 wheel loader provides backup for the excavator and undertakes ROM stockpile rehandle to the plant plus other operational tasks

The support fleet includes mid-sized grader, track dozers and water truck. Ancillary plant includes small excavators and trucks, lighting plants, pumps, forklift, compactor, crane, service trucks, bus and light vehicles.

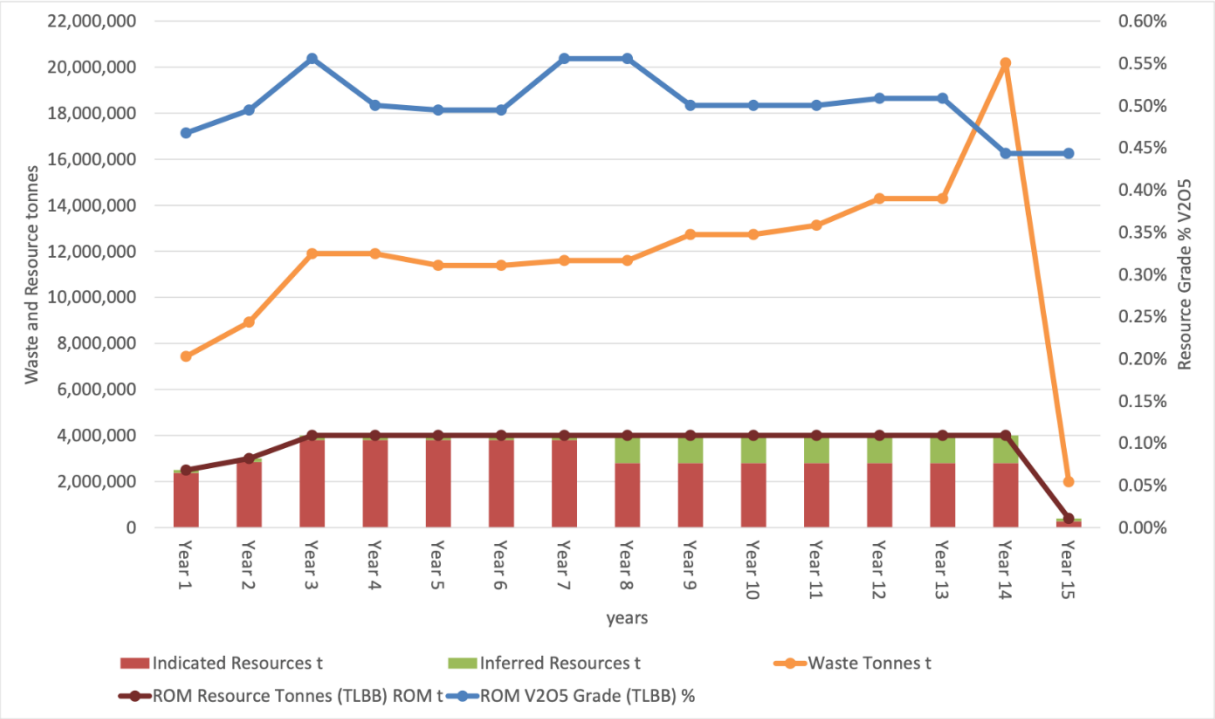
It has been assumed that the operation will work 6 days per week with two 10-hour shifts per day using two labour panels and a small relief crew to cover absenteeism and weekend shifts as required.

Production Schedule

The mine production schedule was based on a cut-off grade of 0.4% V_2O_5 for TLBB which was developed from metallurgical test results, recoveries, predictions of product price, process and mining costs. The mine schedule was developed using Spry software. Graphs of this production schedule are shown in **Error! Reference source not found.**4. The production schedule is also shown in **Error! Reference source not found.**. Over 15 year of mine life 175.5 Mt of waste and 53.9 Mt Resource is mined at a strip ratio of 3.35 t/t. Allowance is made for a 5% resource mining loss and 5% waste dilution.

The resource production consists of TLBB 53.9Mt at 0.506% V_2O_5. Resource from the North pit is approximately 24Mt or 7 years and from the south pit is 30Mt or 8 years. The first 7 years of mining is predominantly Indicated Resources (95% Indicated). Thereafter over the remaining 8 years of the production schedule the split between Indicated and Inferred resources averages approximately 70% to 30% respectively.

Figure 4 - Mine Production Schedule Resource tonnes and grade



Mining Cost Estimate

A high-level scoping accuracy mining capital and operating cost estimate was undertaken for the purpose of providing mining cost input into the project economic model. The capital and operating cost estimate was estimated from first principles making allowances for productivity, mining fleet, annual operating hours, plant life, capital estimate and hourly operating cost excluding operator and maintenance labour, overheads and supervision.

The LOM average operating cost was $A2.53/t of total material moved. The initial capital cost is $24 million for mining plant and $3.1 million for mining infrastructure, and replacement capital is estimated at $34.6 million, resulting a LOM capital estimate of $61.7 million and allows for 15% contingency and 10% salvage value on replaced equipment.

Table 1 - Mine Resource Production Schedule TLBB

		Total	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
		Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Results												
Waste Tonnes	t	175,460,824	7,434,390	8,921,268	11,895,024	11,895,024	11,384,456	11,384,456	11,602,510	11,602,510	12,731,670	12,731,670
ROM Resource Tonnes (TLBB)	ROM t	53,893,229	2,500,000	3,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000
ROM V2O5 Tonnes (TLBB)	t	272,923	11,688	14,836	22,225	20,003	19,781	19,781	22,225	22,225	20,003	20,003
ROM V2O5 Grade (TLBB)	%	0.506%	0.468%	0.495%	0.556%	0.500%	0.495%	0.495%	0.556%	0.556%	0.500%	0.500%
ROM Strip Ratio	t:t	3.3	3.0	3.0	3.0	3.0	2.8	2.8	2.9	2.9	3.2	3.2
Resources by JORC Category												
Indicated Resources	t	44,100,260	2,375,000	2,850,000	3,800,000	3,800,000	3,800,000	3,800,000	3,800,000	2,800,000	2,800,000	2,800,000
Indicated ROM V2O5 Grade	%	0.506%	0.468%	0.495%	0.556%	0.500%	0.495%	0.495%	0.556%	0.556%	0.500%	0.500%
Inferred Resources	t	9,792,969	125,000	150,000	200,000	200,000	200,000	200,000	200,000	1,200,000	1,200,000	1,200,000
Inferred ROM V2O5 Grade	%	0.506%	0.468%	0.495%	0.556%	0.500%	0.495%	0.495%	0.556%	0.556%	0.500%	0.500%
Proportion Indicated	%	82%	95%	95%	95%	95%	95%	95%	95%	70%	70%	70%
Proportion Inferred	%	18%	5%	5%	5%	5%	5%	5%	5%	30%	30%	30%
TLBB Resource												
TLBB ROM Resource Tonnes	ROM t	53,893,229	2,500,000	3,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000
TLBB ROM V2O5 Tonnes	t	272,923	11,688	14,836	22,225	20,003	19,781	19,781	22,225	22,225	20,003	20,003
TLBB ROM V2O5 Grade	%	0.506%	0.468%	0.495%	0.556%	0.500%	0.495%	0.495%	0.556%	0.556%	0.500%	0.500%

		2036	2037	2038	2039	2040
		Year 11	Year 12	Year 13	Year 14	Year 15
Results						
Waste Tonnes	t	13,131,670	14,291,302	14,291,302	20,179,755	1,983,816
ROM Resource Tonnes (TLBB)	ROM t	4,000,000	4,000,000	4,000,000	4,000,000	393,229
ROM V2O5 Tonnes (TLBB)	t	20,003	20,336	20,336	17,732	1,743
ROM V2O5 Grade (TLBB)	%	0.500%	0.508%	0.508%	0.443%	0.443%
ROM Strip Ratio	t:t	3.3	3.6	3.6	5.0	5.0
Resources by JORC Category						
Indicated Resources	t	2,800,000	2,800,000	2,800,000	2,800,000	275,260
Indicated ROM V2O5 Grade	%	0.500%	0.508%	0.508%	0.443%	0.443%
Inferred Resources	t	1,200,000	1,200,000	1,200,000	1,200,000	117,969
Inferred ROM V2O5 Grade	%	0.500%	0.508%	0.508%	0.443%	0.443%
Proportion Indicated	%	70%	70%	70%	70%	70%
Proportion Inferred	%	30%	30%	30%	30%	30%
TLBB Resource						
TLBB ROM Resource Tonnes	ROM t	4,000,000	4,000,000	4,000,000	4,000,000	393,229
TLBB ROM V2O5 Tonnes	t	20,003	20,336	20,336	17,732	1,743
TLBB ROM V2O5 Grade	%	0.500%	0.508%	0.508%	0.443%	0.443%

Metallurgical testing

Metallurgical testing of the vanadium within the project limits has been undertaken on each of the process flowsheet steps, which enabled the development of an economically viable beneficiation process, warranting further pilot plant testing. The process to produce V_2O_5 and MoO_3 consists of beneficiation and upgrade comprising scrubbing, screening, cyclones, flotation, and dewatering. This is followed by roasting, sulphuric acid leach, metal extraction and product precipitation and packaging for transport.

Metallurgical testing and evaluation of each of the horizons within the deposit, has subsequently identified the economic viability of the upper horizon within the mining sequence[2][3]. Further evaluation is planned by CMG to confirm the inclusion of the upper horizon in the next Mineral Resource Estimate update. An option being evaluated as part of further analysis is to stockpile the upper and mid horizon material separately on the ROM and process them separately.

The metallurgical work also identified potential for molybdenum build-up to economically viable levels in the waste stream, therefore molybdenum was included in the process flow sheet.

A series of processing test programs were carried out to evaluate the production of HPA. The test work identified that using the Lava Blue technology, the Lindfield deposit could produce a 4N quality HPA product.

Infrastructure

An evaluation of the site and regional infrastructure and utilities concluded that the power and water requirements for the Project are readily achievable. Water supply is planned in the Study through existing water bores and regional water harvesting, whilst power is planned to be sourced from a combination of offsite grid supply, on-site generation, and gas from off-site supply. On-site infrastructure to support the operation within the Study included buildings, dams, workshops, water treatment plants, fuel facilities, accommodation, laboratory and other minor assets. A tailings storage facility is envisaged and has been provided for in the Study to manage and treat the waste streams from the processing plant.

[2] Please refer to Company's ASX announcement dated 22 August 2023.

[3] Please refer to Company's ASX announcement dated 29 August 2023.

Environmental, Social, and Governance

The Project area is located within the Mitchell Grass Downs (MGD) bioregion and is comprised of open grassland dominated by Mitchell grass tussock grasslands on rolling plains. The Project area is used for cattle grazing on unimproved pasture and is in a largely undisturbed state. Desktop searches for MNES and MSES (Matters of National and State Environmental Significance respectively) have been undertaken and will be followed up in future studies.

Given the size of the existing workforce and the number of proponents operating in the area, a Social Impact Assessment (SIA) may be required to assess the potential benefits and impacts the Project may have on the social values of the local and regional communities. The SIA would involve consultation with identified interested and affected stakeholders, including the local community (including businesses), landowners, Indigenous groups, Council, State and Local government representatives and other specialist interest groups. CMG have commenced engagement with the McKinlay Shire Council and relevant State Government representatives. This early engagement and feedback from previous work by other parties have indicated some consistent themes central to all engagement and community consultation activities which will be followed up in a tailored stakeholder engagement program so that key community concerns and feedback can be recorded and considered, and that meaningful stakeholder engagement informs all aspects of the Project

Marketing

An assessment of the vanadium market identified the global vanadium production totals approximately 140,000 tonnes, with most of the production originating from China and Russia using slag, a by-product from the steel making process in addition to a limited number of vanadium mines in Brazil and South Africa. Approximately 92% of the vanadium is used in steel applications. The emerging use of vanadium in energy storage applications shows a strong growth predicted within the vanadium redox flow batteries (VRFB) market with projections showing a Compound Average Growth Rate (CAGR) of 19.5% to 2030 and beyond (Wood Mackenzie Mar 23).

Vanadium prices are subject to a moderate level of volatility due to factors such as global steel production, demand from the energy storage sector, supply disruptions, and changes in government policies. The growth forecast from battery markets is significant for the foreseeable future and is forecast to reach 33% of global market demand in 2030. (Wood Mackenzie Mar 23).

Economics

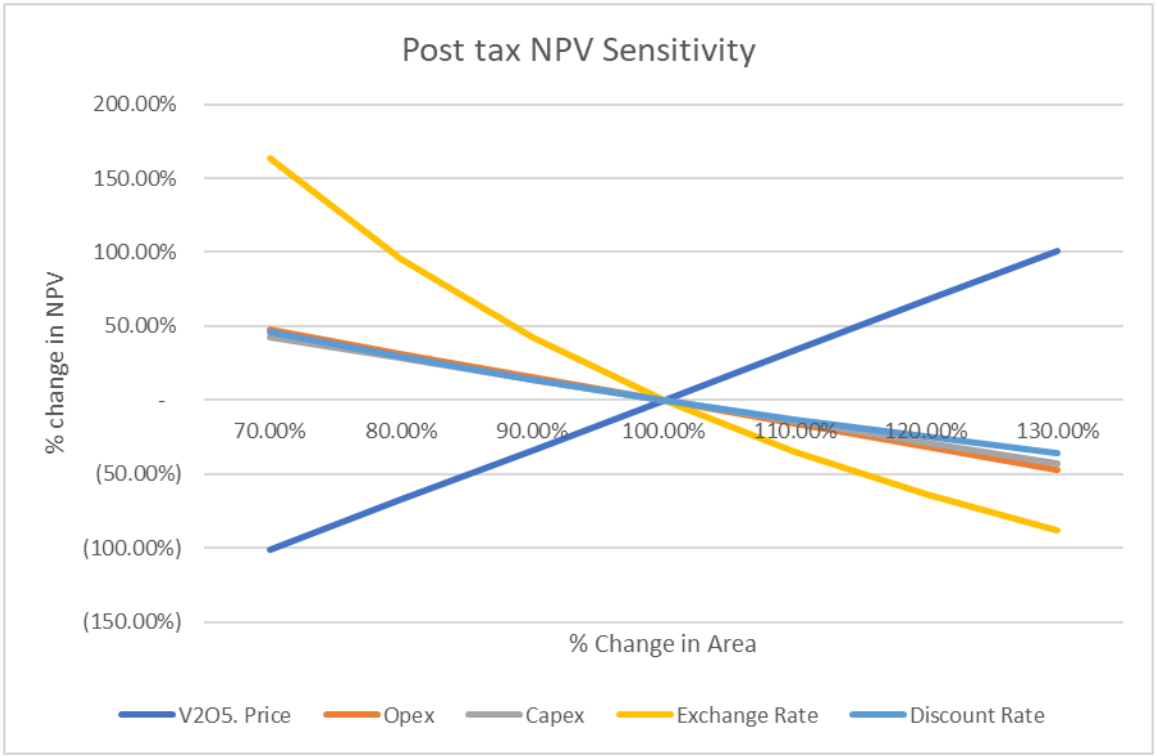
The financial analysis was carried out on a range of ROM production and mining schedules, which indicated that the financial returns improved as ROM production levels increased, however with an associated increase in capital costs. The financial analysis was carried out on the 4 Mtpa ROM option producing vanadium pentoxide and molybdenum trioxide. The

scoping study level results supported a viable vanadium mine, generating an after-tax IRR of approximately 17%, and a positive NPV of approximately AUD 510 million (assuming USD$9.50 / lb 98.5% V_2O_5, USD$57.5 / kg 99% MoO_3, FX of $0.68 and Royalty Rate 2.5%).

The capital estimate included the site infrastructure and processing facility to support a 4 Mtpa ROM production capacity, producing vanadium and molybdenum. Direct capital costs were estimated at approximately AUD 400 million (excluding indirect costs, EPCM, owners' costs and contingency), enabling average production levels per annum of approximately 10,500 tonnes of vanadium pentoxide, and 550 tonnes of molybdenum trioxide. The Study however highlighted opportunities which could be investigated, based on further engineering to reduce the current overall capital cost estimate.

A sensitivity analysis was carried out on the Project's NPV using key variables included as part of the Study (see Figure below). Based on the post-tax results from the scoping study level financial model (accuracy ±35%-50%), each of the key input variables was adjusted between the limits of ±30% at 10% intervals, with all other variables held constant. The sensitivity analysis included the key areas of influence on the Project results, i.e., V_2O_5 price, AUD/USD exchange rate, operating costs, capital costs and discount rate. The analysis indicates that the Project is most sensitive to exchange rate fluctuations, followed by V_2O_5 price, discount rate, operating cost, and capital cost.

Figure 5 – Post Tax NPV Sensitivity



Commenting on the results, Critical Minerals Group Managing Director, Scott Winter, said:

"*We are excited to announce that the Lindfield Vanadium project has been assessed as a financially viable mining project. With an IRR and positive NPV of approximately 17% and $510 million respectively from the vanadium pentoxide and molybdenum trioxide products streams, this is a terrific result and one that underpins the next phase of study and test-work. CMG has been focussed on assessing the resource to identify the potential for the various viable product streams and the results show that vanadium pentoxide, high purity alumina and molybdenum trioxide are all profitable. The economic analysis has only included the vanadium and molybdenum product streams but when the market opportunity arises we see the HPA as significant upside to the returns.*

"The study has been a success in developing and refining our process flow sheet to the point of achieving concentrate and recovery grades that warrant the next phase of pilot plant testing. Furthermore, the testing has identified a potentially significant upside in the overall resource with the positive beneficiation results achieved in the processing of the upper horizon. An assessment of the site-based development infrastructure has estimated the direct capital costs at approximately AUD 400 mil (not including indirect costs, EPCM, owner's costs and contingency), with approximately opportunities for reductions in capital as further detailed engineering is progressed.

"We are also encouraged by the availability and accessibility of utilities including power, water and gas that will be required to support the project. These will be provided through a combination of existing infrastructure, new regional infrastructure and planned on-site facilities.

The study has highlighted to CMG that the strategy to progress with the development of a vanadium pentoxide operation will generate significant returns for shareholders and bring ongoing benefits to local stakeholders in the Julia Creek region. It has also identified where the areas of risk such as market volatility and approvals and opportunity such as other by-products and government grant incentives exist so that we can focus on further improving the project."

This announcement was approved for release by the board.

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About Critical Minerals Group Limited

Critical Minerals Group Limited (**ASX:CMG**, **"CMG"** or the **"Company"**) is an exploration company with the principle focus of developing critical minerals projects. CMG was formed to identify, secure, acquire and develop critical mineral resource tenements in proven regions in Australia.

CMG is building its position in the vanadium market, holding a tenement in north-west Queensland near the town of Julia Creek which is its flagship project known as the Lindfield Vanadium Project. CMG also holds applications for projects at Figtree Creek and Lorena Surrounds, both exciting greenfield copper-gold projects that support CMG's focus on critical mineral opportunities.

CMG is founded on the outlook of the global energy disruption and the transition that is currently underway and the chance to grasp the opportunities arising from the substantial changes in the world around us. The rising standard of living of a growing global population is likely to continue to drive demand for critical minerals for years to come, particularly during the phase of decarbonisation and electrification. The world will need to find a way to meet this growing demand for such minerals, and CMG is well-positioned to meet this new economy mineral demand as the world turns towards a more renewable future.

Competent Person Statements

The information above that relates to Mineral Resource estimates is based on, and fairly represents, information compiled by Adrian Buck, a Competent Person, who is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM). Adrian Buck is the Principal Geologist – Australia for John T Boyd Company. Adrian Buck has sufficient experience with the style of mineralisation and type of deposit under consideration, and to the activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the '*Australasian Code for Reporting of Exploration Results, Exploration Targets, Mineral Resources and Ore Reserves*'. Adrian Buck consents to the inclusion of the matters based on their information in the form and context in which it appears.

The information above that relates to metallurgy and metallurgical test work is based on, and fairly represents, information compiled by Nicola Semler, a Competent Person, who is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM). Nicola Semler is the Metallurgist and Chief Technical Officer – CMG. Nicola Semler has sufficient experience with the style of mineralisation and type of deposit under consideration, and to the activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the '*Australasian Code for Reporting of Exploration Results, Exploration Targets, Mineral Resources and Ore Reserves*'. Nicola Semler consents to the inclusion of the matters based on their information in the form and context in which it appears.

The information above that relates to mining engineering and mine planning is based on, and fairly represents, information compiled by Gary Benson. Mr Benson BE is a Mining Engineer with 40 years of experience and is a Fellow of the Australasian Institute of Mining and Metallurgy (FAusIMM). Mr Benson has sufficient experience, which is relevant to the style of mineralisation, geology and type of deposit under consideration and to the activity being undertaken to qualify as a competent person under the 2012 edition of the Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2012);

Mr Benson is an Associate of Measured, is independent of CMG; and consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Forward-Looking Statement

This document may include forward-looking statements. Forward-looking statements include, but are not limited to, statements concerning planned exploration program and other statements that are not historical facts. When used in this document, the words such as “could”, “plan”, “estimate”, “expect”, “intend”, “may”, “potential”, “should” and similar expressions are forward-looking statements. Although the Company believes that its expectations reflected in these forward-looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that actual results will be consistent with these forward-looking statements.