

21 February 2023

Fourth Quarter Update 2022

Macarthur Minerals Limited (TSXV: MMS) (ASX: MIO) (OTCQB: MMSDF) (the Company or Macarthur) is pleased to report on its activities for the Quarter ended 31 December 2022.

2022 Fourth Quarter Highlights

- Primary focus continued on securing key strategic partners for the Lake Giles Iron Project
- Repositioning Nevada lithium claims
- Grant L30/0093 for the purpose of groundwater exploration to support the Lake Giles Iron Project
- Review of nickel prospectivity to value-add to a potential transaction for the Lake Giles Iron Project

Key Areas of Focus for 2023

- Securing Strategic Partnership(s) for the Lake Giles Iron Project
- Lake Giles nickel project
- Nevada lithium projects

Strategic Partnerships

The Company has identified and invited potential strategic partners to complete due diligence on the Lake Giles Iron Project. The Company is progressing discussions with these groups to identify a transaction structure that will deliver value to Macarthur shareholders.

Lake Giles Nickel

The Company has previously identified the potential for nickel sulphide on the Lake Giles tenements however in recent times, has dedicated its focus on advancing the Lake Giles Iron Project. In the latter half of 2022, post the completion of the Feasibility Study and establishment of the Strategic Sub Committee of the Macarthur Board, it was determined that a comprehensive review of the nickel potential was warranted. Nickel is high in demand with significant growth in the nickel price over 2022. Nickel mining in Western Australia in the 2021-22 year was the fourth most value commodity earning \$4.9 billion (the highest level in 15 years). High demand was also seen in the exploration sector where spending on nickel-cobalt increased to the highest levels in nearly a decade, totalling \$241 million (see [Western Australian Mineral and Petroleum Statistics Digest 2021-22](#)).

The Lake Giles iron mineralization is Banded Iron Formation in association with komatiite ultramafic units with similarities to the Lake Johnson system which hosts the [Maggie Hays nickel mine](#).

the green iron ore company



The Lake Giles tenements were briefly looked at for nickel by exploration companies between 1968 – 1972 during the nickel boom and for gold between 1974 to 1978. Macarthur originally acquired the Lake Giles Project areas for nickel exploration in 2000 and much of the early exploration focused on nickel. In 2005 a renewed global interest in iron ore encouraged the Company to switch focus to hematite and magnetite iron resource definitions and project development.

During a period of subdued iron ore pricing in 2018, the Company initiated a small-scale exploration program targeting nickel sulphide mineralisation at the Snark and Moonshine prospects at the Lake Giles tenements. A moving loop electromagnetic survey (MLEM) was completed followed by two RC holes.

Following recent discussions with a potential strategic partner for the Lake Giles Iron Project, the Company completed a review of the nickel potential of the tenements to value-add a potential transaction on the iron project. The Company intends to present an update on the prospectivity of the Lake Giles tenements for nickel in Q1 2023.

Pilbara Iron Ore Projects

Macarthur also owns mineral rights for iron ore on two tenements located in the Pilbara region of Western Australia, Strelley Gorge – E45/4725 and Tambourah North - E45/5324. All other mineral rights on the two tenements are held by Macarthur’s spinout company, Infinity Mining Limited (ASX: IMI).

Strelley Gorge - E45/4735

- The Strelley Gorge project is located in the Pilbara region of Western Australia and immediately east of Atlas Iron’s Abydos iron ore mine and south of its planned Sandtrax deposit which forms part of its [Miralg Creek iron ore mine](#).
- Limited reconnaissance exploration has focused on the Banded Iron Formation (BIF) along strike of the Abydos iron ore mine. Two samples taken from iron rich outcropping banded iron formation returned significant results of DSO quality iron ore (refer to following table and images)¹.
- In December 2022, the Company applied for an extension of term to the exploration licence.
- The Company continues to maintain this project and will advance the project once a transaction has been completed for the Lake Giles Iron Project.

Table 1. Iron ore samples collected by FEL in 2019

Sample	Latitude	Longitude	Al2O3	Fe	MgO	Mn	P	S	SiO2	LOI
			%	%	%	%	%	%	%	%
ST002	21° 7'33.02"S	119° 8'14.99"E	0.72	61.3	0.01	0.047	0.012	0.034	3.97	7.39
ST003	21° 7'30.83"S	119° 8'15.50"E	1.38	58.11	0.05	0.099	0.152	0.008	3.6	11.21

¹ [FEL ASX Announcement: High Grade Iron Ore results received from Strelley Tenement in the North Pilbara. 5 September 2019](#)



Sample ST002 grading 61.3% Fe



Sample ST003 grading 58.1% Fe

Tambourah North - E45/5324

- The Tambourah North project is located south of Port Hedland and 7.5 km north of Infinity's Tambourah South lithium project.
- The tenement is prospective for iron ore with past drilling by Atlas Iron intersecting DSO grade iron ore in several holes in the iron-rich BIF ridges.

Nevada Lithium Assets

The Company continues to examine the potential to reposition or seek strategic partnership(s) that can advance a programme of works to realise an improved value proposition for the Company's 100% owned 210 lithium brine mining claims, covering an area of 7 square miles (18 km²) located in Railroad Valley, in Nye County, Nevada, USA. The 210 claims are located approximately 180 miles (300 km) North of Las Vegas, Nevada, and 330 miles (531 km) Southeast of Tesla's Gigafactory.



Driven by the tight supply in the lithium market expected to grow significantly to 2030 and as demand for product remains incredibly strong², the Nevada lithium assets are positioned to capture value for Macarthur.

Investment in Infinity Mining Limited

Macarthur holds 21.1% of the issued equity and is the largest shareholder in Infinity Mining Limited (ASX: IMI), an Australian mining exploration company focused primarily on renewable rare earth minerals in Western Australia.

Macarthur's spinoff to Infinity Mining in 2021, of its non-core renewable energy assets has allowed the Company to commit its full focus to its flagship Lake Giles Iron Project in Western Australia.

Cameron McCall, Chairman of Macarthur Minerals commented:

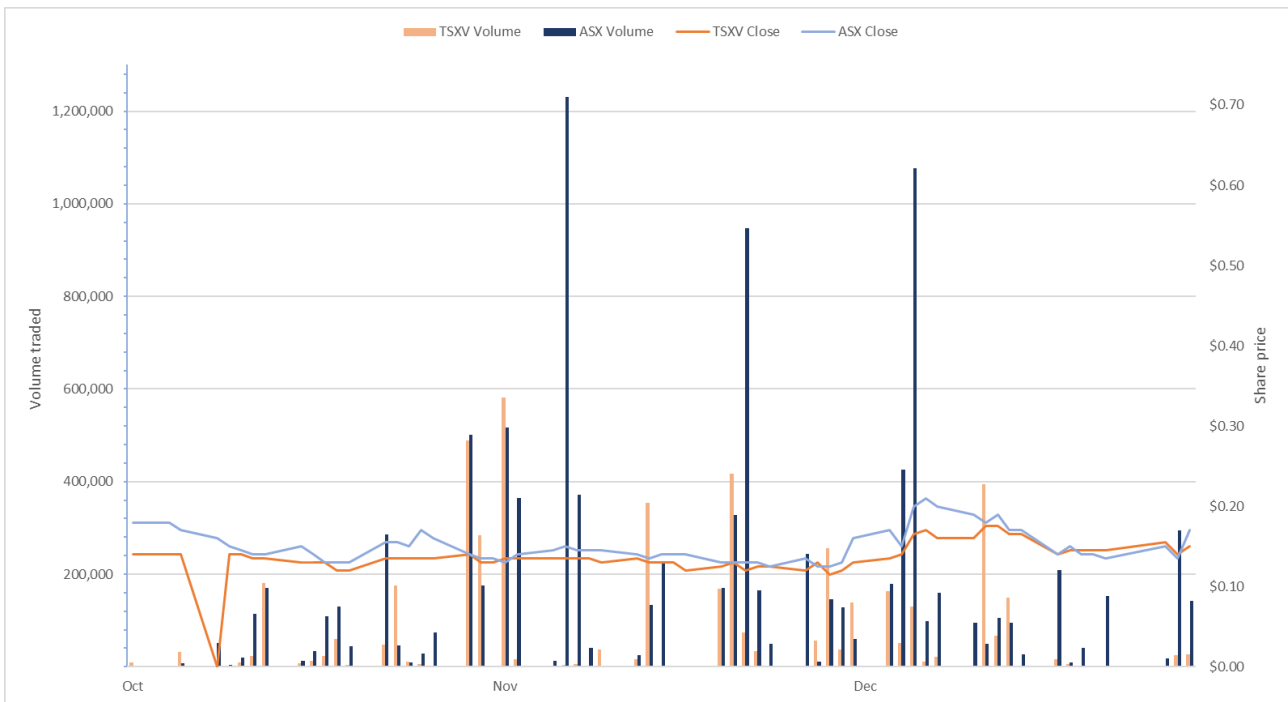
"Over the past year, our primary focus has been on advancing the Lake Giles Iron Project, which is currently the most technically advanced magnetite project in Western Australia's Yilgarn region. With a high-grade magnetite product that has low impurities and can aid the global shift towards net-zero emissions, Macarthur is well-positioned to benefit from this shift and support Australia's move towards a cleaner steel future. The project boasts a massive high-grade magnetite mineral resource of 1.3 billion tonnes, offering significant upside potential for our shareholders not just in the near term but for decades to come. Despite a busy year, our unwavering commitment to advancing the Lake Giles Iron Project has been a top priority."

Share Price

Both ASX and TSXV continue to demonstrate reasonably synchronised share price trading patterns for MIO and MMS. Although Macarthur's share price has pulled back over the fourth quarter, this is not an anomaly that is specific to Macarthur, as it reflects the broader patterns and impacts felt across the entire iron ore industry following the pull-back in global prices during Quarter 1 to 3 of 2022. Encouragingly, iron ore prices are still above pre-Covid levels, demonstrating the resilience of a sector that supplies a critical global resource necessary for many facets of human endeavour and advancement.

A summary of MIO/MMS trading activity from October 2022 to December 2022 is shown below:

² [Markets and markets](#)



On behalf of the Board of Directors, Mr Cameron McCall, Executive Chairman and CEO

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Company profile

Macarthur is an iron ore development, and lithium exploration company that is focused on bringing to production its Western Australia iron ore projects. The Lake Giles Iron Project mineral resources include the Ularring hematite resource (approved for development) comprising Indicated resources of 54.5 million tonnes at 47.2% Fe and Inferred resources of 26 million tonnes at 45.4% Fe and the Lake Giles magnetite resource of 53.9 million tonnes (Measured), 218.7 million tonnes (Indicated) and 997 million tonnes (Inferred). The Lake Giles Iron Project also contains Proven Ore Reserves of 51.9 Mt and Probable Ore Reserves of 184.7Mt. Macarthur also holds 24 square kilometre tenement area iron exploration interests in the Pilbara region of Western Australia. In addition, Macarthur has lithium brine Claims in the emerging Railroad Valley region in Nevada, USA.

No new information

The Mineral Resource and Ore Reserve estimates presented above have previously been released to the ASX on 21 March 2022, including supporting JORC reporting tables. Unless explicitly stated, no new information is contained in accordance with Table 1 checklist in the JORC Code. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcements and, in the case of Mineral Resources and Ore Reserves that all assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.



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Caution Regarding Forward Looking Statements

Certain of the statements made and information contained in this press release may constitute forward-looking information and forward-looking statements (collectively, “forward-looking statements”) within the meaning of applicable securities laws. All statements herein, other than statements of historical fact, that address activities, events or developments that the Company believes, expects or anticipates will or may occur in the future, including but not limited to statements regarding expected completion of the Feasibility Study; conversion of Mineral Resources to Ore Reserves or the eventual mining of the Project, are forward-looking statements. The forward-looking statements in this press release reflect the current expectations, assumptions or beliefs of the Company based upon information currently available to the Company. Although the Company believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance and no assurance can be given that these expectations will prove to be correct as actual results or developments may differ materially from those projected in the forward-looking statements. Factors that could cause actual results to differ materially from those in forward-looking statements include but are not limited to: unforeseen technology changes that results in a reduction in iron or magnetite demand or substitution by other metals or materials; the discovery of new large low cost deposits of iron magnetite; the general level of global economic activity; failure to complete the FS; inability to demonstrate economic viability of Mineral Resources; and failure to obtain mining approvals. Readers are cautioned not to place undue reliance on forward-looking statements due to the inherent uncertainty thereof. Such statements relate to future events and expectations and, as such, involve known and unknown risks and uncertainties. The forward-looking statements contained in this press release are made as of the date of this press release and except as may otherwise be required pursuant to applicable laws, the Company does not assume any obligation to update or revise these forward-looking statements, whether as a result of new information, future events or otherwise.