

NEWS RELEASE
June 17, 2019

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For Immediate Dissemination

MACARTHUR FILES TECHNICAL REPORT FOR LAKE GILES IRON ORE PROJECT

Macarthur Minerals Limited (TSX-V: MMS) (OTCQB: MMSDF) (the “Company” or “Macarthur”) is pleased to announce the results of the Preliminary Economic Assessment (“PEA”) undertaken by independent consultants Engenium Pty Ltd (“Engenium”) for its 100% owned Lake Giles Iron Ore Project (“the Project”) in Western Australia.

The PEA was completed for a 2.5 to 3.4 Mtpa operation incorporating the Moonshine Magnetite and Ularring Hematite Mineral Resources to produce a high-grade blended concentrate in excess of 65% Fe. The technical and financial evaluation in the PEA indicates the Project is potentially economically viable and further project development is justified.

The independent technical report, entitled “NI43-101 Technical Report, Macarthur Minerals Limited, Preliminary Economic Assessment Lake Giles Iron Project, Western Australia, (the “**2019 Technical Report**”) with an issue date of June 13, 2019, was prepared in accordance with the requirements of National Instrument 43-101 (“NI 43-101”). The 2019 Technical Report is filed under the Company’s profile on the System for Electronic Document Analysis and Retrieval (“**SEDAR**”) website at www.sedar.com (filing date: June 17, 2019) and on the Company’s website at www.macarthurminerals.com

PEA Highlights

The key financial outcomes are summarised below:

- Project after-tax real Net Present Value (“NPV”) of US\$375 million at an 8% discount rate, based on a discounted cash flow model with:
 - a project life of 31 years with saleable product of 2.5 to 3.4 million tonnes per annum (“Mtpa”)
 - total sales of 83 million tonnes; and
- Total Life of Mine (“LOM”) free cash flow of US\$1,465m.
- Total direct operating costs (excluding royalties) are estimated at US\$3.1 billion (rounded).
- Total project costs (direct and indirect operating costs, capital spend including contingency, rehabilitation and sustaining capital) are estimated at US\$4.5 billion (rounded).
- The project is potentially highly profitable with a discounted payback (based on NPV) in 3 years.
- Average operating costs of US\$37.62 including US\$31.30/t Free on Board (“FOB”) for hematite and US\$37.43/t FOB for magnetite.
- Total revenue estimated at US\$6.8 billion (rounded).
- Total capital cost estimated at US\$326 million including contingency of US\$44 million.
- Rehabilitation costs of US\$38 million and sustaining capital expense over LOM of US\$54 million.

Note: The outcomes of the economic assessment is preliminary in nature and includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary economic assessment will be realised.

Revised Project Strategy

In February 2011, Macarthur released its Preliminary Economic Assessment (“2011 PEA”) for the Moonshine Magnetite Project for the production of 10 Mtpa of high-grade magnetite concentrate (press release dated February 7, 2011¹). The 2011 PEA outlined several logistical and port scenarios including slurry transport 110 km to a dewatering plant and rail siding south of the town of Menzies.

Similarly, in September 2012, Macarthur released its Prefeasibility Study (“2012 PFS”) (press release dated August 16, 2012²) for the Ularring Hematite Project, which focused on mining 2 million tonnes per annum (“Mtpa”) of hematite/goethite iron ore. The 2012 PFS outlined a wet beneficiation process that would produce a +60% Fe sinter fines product.

Since the release of those studies, the iron ore market has undergone a dramatic shift where low grade iron ore <60% Fe is currently heavily discounted while the high-grade market, including magnetite concentrate, is attracting premium pricing.

In response, Macarthur has revised its strategy to align the Projects with the robust current and forecast market conditions, capital markets and available capacity of regional infrastructure. The major impediment to development of the Moonshine Magnetite Project envisaged by the 2011 PEA, was the substantial capital cost and access to export capacity at the Port of Esperance. The revised project strategy targets an initial production rate of 3 Mtpa of high grade, low impurity concentrate, along with streamlined project infrastructure, significantly reducing capital cost.

The revised Projects will see a combined hematite and magnetite operation where the product will be a high grade, blended magnetite and hematite concentrate. This strategy allows low grade hematite (~56% Fe) to be blended with a high-grade magnetite concentrate (~68%) in a ratio to achieve a final concentrate grading 65% Fe.

Operating and Capital Costs

The operating strategy for the Lake Giles Project is to export high-grade (+65% Fe) magnetite concentrate via the existing Port of Esperance (“Port”) owned and operated by the Western Australian Government. Magnetite concentrate will be processed on site, road hauled 90km to the existing open access rail network operated by Arc Infrastructure and then railed to the Port of Esperance.

As reported on April 8, 2019, access to the existing rail network has been confirmed and the Company has entered into an Exclusive Negotiation Agreement with Aurizon for rail haulage services. The Company is in advanced discussions with the Western Australian Government for access to the Port and the capital estimate includes infrastructure upgrades at the Port.

Operating and capital costs are summarised in Tables 1 and 2.

¹ Press Release filed February 7, 2011, titled “Macarthur Minerals Receives Positive Scoping Study on The Moonshine Magnetite Deposit at Lake Giles”

² Press Release filed August 16, 2012, titled “Macarthur Minerals Receives a Positive Preliminary Feasibility Study on The Ularring Hematite Project”

Table 1. Capital Costs for the Lake Giles Project

	Capex \$ million	
	US\$	A\$
Mine	6.1	8.7
Crushing	20.3	29.0
Process	84.4	120.6
Tailings	10.3	14.7
Infrastructure	69.3	99.0
Logistics	15.4	22.0
Port	14.7	21.0
Total direct costs	220.5	315.0
Construction indirects	33.1	47.3
Owners costs	6.7	9.5
EPCM	22.1	31.5
Contingency	44.1	63.0
Total indirect costs	105.9	151.3
Total project cost	326.4	466.3

Table 2. Operating Costs for the Lake Giles Project

	Opex US\$/t FOB		Opex A\$/t FOB	
	Magnetite	Hematite	Magnetite	Hematite
Mining	8.42	9.69	12.03	13.85
Crushing	0.84	2.10	1.20	3.00
Process	9.39	0.22	13.41	0.32
Tailings	0.33		0.47	
Road transport	5.04	6.11	7.20	8.73
Filtration	0.25	0.25	0.35	0.35
Rail	7.92	7.92	11.31	11.31
Port	2.72	2.72	3.89	3.89
Indirects	2.53	2.53	3.61	3.61
Total operating costs (\$/t concentrate)	37.43	31.30	53.47	44.71

Economic Analysis

A discounted cash flow model was used to derive a NPV for the Project at a discount rate of 8% over 31 years. The outcome of the base case financial valuation is shown in Table 3.

Following project development capital of approximately US\$326m in years 1 and 2, the project generates on average US\$77m of free cash flow per annum in the first 8 years of production. Once the hematite blending stock has been exhausted, the project generates on average US\$54m per annum for the remaining 23 years. Total free cash flow totals US\$1,465m or US\$375m discounted at 8% pa.

Table 3. Outcomes of discounted cash flow model at 8% discount

Financial Valuation	US\$	A\$
NPV at 8% discount rate*	US\$375 million	A\$535
Internal Rate of Return*	21%	
Project life	31 years	
Fe grade of saleable product	65 – 68% Fe	
Total sales tonnes	82.8 Mt	
Capital payback period	3 years	
Total revenue generated (real)	US\$6.88 billion	A\$9.83 billion
Long Term Fe price**	US\$86 /t (FOB)	
Long term A\$/US\$ exchange rate	0.70	

* *Real, after-tax*

** *Benchmark 65% Platts Fe Index adjusted to final product grade*

Note: The outcomes of the economic assessment is preliminary in nature and includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves and there is no certainty that the preliminary economic assessment will be realised.

State and Regional Benefits

The Lake Giles Project will provide a vital boost to the local Goldfields and Esperance communities that have suffered from a significant decline in iron ore export. The Project will provide long-term iron ore supply for the Port of Esperance which has traditionally been underpinned by bulk iron ore exports.

The Project will also contribute approximately US\$9.8m annually and US\$260m over the life of the Project in royalties to the WA Government. In addition, the Project will contribute over US\$1 billion in income tax.

Resource Base

The Project incorporates the Mineral Resources of the Moonshine Magnetite Project and the Ularring Hematite Project. The Moonshine magnetite resource contains Inferred Mineral Resources of approximately 710 mt at 30.2% Fe. The Ularring Hematite resource includes Indicated Mineral Resources of approximately 54.46 Mt at 47.2% Fe and Inferred Mineral Resources of approximately 25.99 Mt at 45.4% Fe. The mineral resource estimates are detailed at the end of this press release.

QUALIFIED PERSON

Neville Dowson, B. App. Sci. (Ext. Met.), MBA, Principal Process Engineer for Engenium Ltd is a full-time employee of Engenium and is a Qualified Person in terms of NI43-101 standards and a Fellow of the AusIMM. Mr Dowson has reviewed and approved the technical information contained in this news release.

ABOUT MACARTHUR MINERALS LIMITED (TSX-V: MMS) (OTCQB: MMSDF)

Macarthur Minerals Limited is an iron ore development company with its focus on bringing into production, its sizeable, 100% owned, Moonshine Magnetite and Ularring Hematite Iron Ore Projects in Western Australia. Macarthur Minerals also has prominent (~1,130 square kilometre tenement area) exploration interests in gold, lithium, nickel, cobalt in the Pilbara region of Western Australia. In addition, Macarthur Minerals has lithium brine Claims in the emerging Railroad Valley region in Nevada, USA.

On behalf of the Board of Directors,

MACARTHUR MINERALS LIMITED

"Cameron McCall"

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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. 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. With respect to forward-looking statements contained in this press release, assumptions have been made regarding, among other things, the reliability of information, including historical mineral resource or mineral reserve estimates, prepared and/or published by third parties that are referenced in this press release or was otherwise relied upon by the Company in preparing this press release. 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 inability to attract competitive finance, delays in the preparation of the BFS, fluctuations in exchange rates and certain commodity prices, uncertainties related to mineral title in the project, unforeseen technology changes that results in a reduction in iron ore demand or substitution by other metals or materials, the discovery of new large low cost deposits of iron ore, and the general level of global economic activity. 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.

ULARRING HEMATITE AND MOONSHINE MAGNETITE RESOURCE ESTIMATES

1. ULARRING HEMATITE

The Mineral Resources for the hematite deposits include Indicated Mineral Resources of Snark, Drabble Downs, Central and Banjo of approximately 54.46 Mt at 47.2% Fe and Inferred Mineral Resources of approximately 25.99 Mt at 45.4% Fe as detailed in Tables 2 and 3. Mineral Resources are reported above a 40% Fe cut-off at Snark, Drabble Downs, Central, Banjo and above 50% Fe at Moonshine.

The Mineral Resources are reported in accordance with 2014 CIM Definition Standards.

Table 1. Mineral Resources, Ularring Hematite Project. Fe>40%

Category	Tonnes Mt	Fe %	P %	SiO ₂ %	Al ₂ O ₃ %	LOI %	S %
Indicated	54.46	47.2	0.06	16.9	6.5	7.9	0.16
Inferred	25.99	45.4	0.06	20.6	6.0	7.2	0.09

Note: The mineral resource was estimated within constraining wireframe solids encapsulating banded iron formation ("BIF") strata. The resource is quoted from blocks above 40 % Fe cut-off grade, except Moonshine where resource is quoted from blocks above 50 % Fe. Differences may occur due to rounding. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. See the 2012 PFS for more information.

Table 2. Mineral Resources, by Deposit, Ularring Hematite Project. Fe>40%

Deposit	Reporting cut-off grade (Fe %)	Category	Tonnes Mt	Fe %	P %	SiO ₂ %	Al ₂ O ₃ %	LOI %	S %
Snark	40	Indicated	21.83	47.2	0.07	17.5	6.1	7.7	0.15
	40	Inferred	10.96	45.2	0.07	21.8	5.1	6.8	0.09
Drabble Downs	40	Indicated	11.07	47.2	0.06	16.6	6.4	8.3	0.26
	40	Inferred	0.36	43.6	0.05	24.0	4.8	7.8	0.09
Central	40	Indicated	15.09	47.0	0.05	16.2	7.2	8.1	0.12
	40	Inferred	10.19	45.3	0.05	20.3	6.3	7.5	0.08
Banjo	40	Indicated	6.47	47.8	0.06	16.7	6.6	7.4	0.14
	40	Inferred	3.88	45.4	0.06	18.7	7.6	7.9	0.09
Moonshine	50	Inferred	0.60	53.0	0.06	13.4	6.7	6.1	0.15

Note: The mineral resource was estimated within constraining wireframe solids encapsulating BIF strata. The resource is quoted from blocks above 40% Fe cut-off grade, except Moonshine where resource is quoted from blocks above 50 Fe %. Differences may occur due to rounding. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

2. MOONSHINE MAGNETITE

The magnetite Mineral Resources include Inferred Mineral Resources of Moonshine and Moonshine North of approximately 710 Mt at 30.2% Fe, as detailed in Table 3. Mineral Resources are reported above a 30% Fe cut-off. The Mineral Resources are reported in accordance with 2014 CIM Definition Standards.

Table 3. Mineral Resources Moonshine and Moonshine North.

Prospect	Tonnes (Mt)	Fe %	SiO ₂ %	P %	Al ₂ O ₃ %	S %	DTR %	LOI %
Moonshine	427.1	29.3	42.1	0.05	1.1	0.5	31.3	0.02
Moonshine North	283.4	31.4	22.7	0.04	0.7	0.2	31.6	0.89
Total	710.5	30.2	34.4	0.05	0.9	0.4	31.4	0.36

Notes:

- Figures contained within Table 3 have been rounded. % Fe grades are rounded to one decimal figure.
- Davis Tube Recovery (DTR) results are the proportion of sample considered extractable by magnetic separation.
- A block model was constructed using three dimensional geological wireframes.
- Variograms were generated and grades were estimated using ordinary kriging.
- Outlines and wireframes honour the actual locations of contacts on drill holes that are off section.
- Density was estimated with a regression from Fe grade based on core and rock samples.