

## **MACARTHUR MINERALS UPDATE ON NICKEL EXPLORATION AT ITS LAKE GILES PROJECT IN WESTERN AUSTRALIA**

**Macarthur Minerals Limited (TSX-V: MMS)** (the “Company” or “Macarthur”) is pleased to provide an update on the results of its drilling of high priority nickel sulphide targets at its Lake Giles project in Western Australia.

Surveying at targets derived from recent geophysical surveys using Moving Loop Electromagnetics (“MLEM”) successfully delineated two bedrock conductors, MC01 and MC02 at Moonshine, with a further bedrock conductor identified at the Snark prospect.

### **HIGHLIGHTS**

- Results for the two Reverse Circulation (“RC”) drill holes completed at Moonshine North have returned encouraging assay results.
- Anomalous nickel in hole 18MRC001 with average of 0.2% Ni over 31 metres (“m”) from 26m.
- Potassic alteration indicated in hole 18MRC001 from 140m to 146m (20% Potassium content) marginal to the sulphide intersection in the hole.
- Anomalous gold associated with sulfidic chert in interval 106m to 113m (average gold content 159 part per billion (“ppb”) over the interval)
- Both holes had successfully intersected sulphide minerals at depth and semi-massive sulphide comprising 20% pyrite/pyrrhotite was recorded over 12m in hole 18MRC002 from 185m to end of hole (“EOH”). Sulphide mineralisation is open at depth and on strike with the hole ending in sulphide mineralisation.

### **Nickel Targets**

Prior to Macarthur’s acquisition of the Lake Giles project, there were two previous periods of limited exploration activity for nickel over parts of the present tenement package.

The tenements were briefly explored for nickel during the late 1960s nickel boom and was then further explored by several companies for gold in the mid-1990s with only very limited shallow reconnaissance drilling undertaken by these explorers.

Combined with available historical data, new geological, geophysical and geochemical data obtained in the course of Macarthur’s extensive geological investigation of the Banded Iron Formation (“BIF”) between 2007 and 2013, indicated that there is potential for nickel sulphide and gold mineralisation within the extensive ultramafic rock package hosting the BIFs that comprise the Macarthur Iron Ore Project.

By way of example, in January 2013 Macarthur drilled diamond hole LGDD\_054, to test high grade magnetite. This hole was collared in ultramafic and was seen to contain unusual textures and veins of a black mineral thought to be after sulphide. Assaying of the core returned from 4.5m to 28.0m (23.5m) 0.85% Ni and this included 1.03% Ni over an 11.5m interval from 10.5m to 22.0m at an estimated true width of around 8m. The intersection also shows very low Ca and high Mg and Cr. The rock is highly weathered and is therefore not conclusive evidence for presence of nickel sulphides, but is encouraging.

The location of LGDD\_054 is given in the table below. Analysis of core samples was completed at ALS Perth Laboratory with Ni (interval 0 – 33.4m) analysed using method PGM-ICP23 (Inductively Coupled Plasma - Atomic Emission Spectrometry).

**Table 1. Drill hole location LGDD\_054 at Moonshine.**

Hole ID	Type of Hole	Target Type	Prospect	Tenement	Purpose	GDA* Easting (Metres)	GDA* Northing (Metres)	Dip (Degree)	E.O.H Depth (Metres)
LGDD_054	Diamond Core	Magnetite	Moonshine North	M30/228	Target high grade magnetite at depth	788,083	6,674,746	-90	370

\*GDA is the Geocentric Datum of Australia

The review and evaluation of geochemical and geophysical data has identified significant exploration targets for nickel. These targets include some fifteen areas considered prospective for discovery of sulphide style nickel within the belt of ultramafic rocks. The targets are associated with potentially significant anomalous highly magnetic ultramafic footwall 'bulges', which may represent a thickening and embayment of the komatiite flow into the footwall stratigraphy.

Much of the Macarthur's historical nickel exploration data together with recent observations suggest a favourable environment for the occurrence of nickel sulphide deposits.

Macarthur considered the Moonshine prospect as a significant prospect for nickel exploration and in 2018 conducted a MLEM survey across three prospects at the Lake Giles project. The survey targets were derived from previous drilling and soil geochemistry data that indicated potential for nickel sulphide.

The surveys discovered:

#### 1. Moonshine Conductor

Strong conductance was recorded across all five lines with modelling delineating two bedrock conductors, MC01 and MC02 (**Figure 1**). The two conductors are both coincident with a magnetic high that is faulted and consequently both MC01 and MC02 are likely to be the same geological unit. MC01 extends over a length of 700m with MC02 extending over 650m however the source can be defined as being open to the north and south.

#### 2. Snark Conductor

The survey at Snark identified two bedrock conductors at SC01 and SC02 (**Figure 2**). These conductors will be drill tested at a later stage.

#### Drilling of the Moonshine Prospect

An initial RC drilling program consisting of two holes was undertaken to test the MC01 conductor at Moonshine. Hole locations were planned to intersect the conductor at 176m and 180m, holes terminated at 198 and 197m (**Table 2**).

**Table 2. Drill hole locations at the MC01 conductor at Moonshine.**

Hole ID	Target Depth (m)	EOH (m)	Easting	Northing
18MNRC001	176	198	788035	6674937
18MNRC002	180	197	787947	6675113

Coordinates in GDA94 Zone 50

#### Analytical Results

Samples were analysed by Interkek Genalysis at their Perth laboratory. Anomalous nickel identified in hole 18MRC001 with average of 0.2% Ni over 31m from 26m.

Potassic alteration indicated in hole 18MRC001 from 140m to 146m (20% Potassium content) marginal to the sulphide intersection in the hole.

Weaker potassic alteration indicated in hole 18MRC002 from 186m to 192m (average Potassium 0.19% over the interval). The alteration is associated with the sulphide intersection in the drill hole.

Anomalous gold associated with sulfidic chert in interval 106m to 113m (average gold content 159ppb over the interval).

### **Interpretation and next steps**

Macarthur's 2018 exploration programme demonstrated that the MLEM survey method can identify massive sulphide in the rock units of the Lake Giles project. At Moonshine, the survey was localised to test around the previously identified drill holes that had returned significant nickel assays. The survey has initially tested some 800m strike of the Moonshine prospects which has been drilled for iron over a length of 7 km and identified two conductors that are open both to the north and south. The 2018 drilling has confirmed that these geophysical anomalies are due to massive and semi-massive sulphide. Although analytical results for the two drill holes does not identify any economic mineralisation trace elements such as potassium indicate marginal zones of potassic alteration that may be a distal expression of other mineralisation.

The anomalous nickel that averages 0.2% in hole 18MRC001 (and earlier assayed holes) should be considered encouraging, an interpretation in 2010 by S. Dorling of CSA Global of similar results in diamond core from drill holes LGDD005 and LGDD006 concluded that it was possible that LGDD\_005 intersected rocks and mineralisation that originated in a volcanic exhalative environment and that the geochemical data supported the geological interpretation which identified mafic volcanic rocks of possible komatiitic composition.

The interpretation of the komatiites of the Moonshine North nickel prospect shows some similarities to the Lake Johnston komatiite system which hosts the Maggie Hays nickel mine. The mine is located approximately 250 kilometres south of the Moonshine North nickel prospect and 117 kilometres west of Norseman. Since closure of the Maggie Hays mine in 2012, Poseidon Nickel Limited acquired the project and remodelled the resource totalling 52,000 tonnes of nickel at a grade of 1.5%<sup>1</sup>. The mineralised bodies are a Kambalda style ultramafic komatiite which is an upturned volcanic flow against basaltic basal unit.

Similarly, Heron Resources Limited discovered several nickel deposits both sulphide and lateritic deposits, approximately 100 kilometres east of Macarthur's Moonshine nickel prospect. One of which, the Siberia South Nickel prospect totalling 104Mt at 0.65% Nickel<sup>2</sup>. Yet another example is the Mt Keith Nickel Mine which lies 85 kilometres north of Wiluna had a total resource of 459Mt at a nickel grade of 0.6% hosted as a disseminated style of mineralisation in komatiitic rocks<sup>3</sup>.

The Moonshine prospect is over 7km in length and has had numerous drill holes completed and assayed for iron suite elements only. This data will be inspected and relogged as necessary and analytical pulps that have been stored by Macarthur will be analysed initially with an XRF analyser to identify the distribution of nickel at the prospect. Further MLEM and drilling will be planned around the results obtained.

### **QUALIFIED PERSONS**

Mr Ian S Cooper, B.Sc., A.R.S.M., F.G.S. FAusIMM, a Fellow of the Australasian Institute of Mining and Metallurgy (membership number 107348, is a consultant of Macarthur and is a Qualified Person as defined in National Instrument 43-101. Mr Cooper has reviewed and approved the technical information contained in this news release.

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<sup>1</sup> Poseidon Nickel Announces Maggie Hays Mineral Resource Announcement dated 9 December 2014.

<sup>2</sup> Kalgoorlie Nickel Project Updated Mineral Resource Estimate 18 October 2013

<sup>3</sup> Geology of the Mineral Deposits of Australia and Papua New Guinea, monograph 22, pages 307 to 314, AusIMM, 1998

**ABOUT MACARTHUR MINERALS LIMITED (TSX-V: MMS)**

Macarthur Minerals Limited is an exploration company that is focused on identifying high grade gold, nickel, cobalt and lithium. Macarthur Minerals has significant gold, lithium, nickel, cobalt and iron ore exploration interests in Australia. Macarthur Minerals has three iron ore projects in Western Australia; the Ularring hematite project, the Moonshine magnetite project and the Treppo Grande iron ore project. In addition, Macarthur Minerals has significant lithium brine interests in the Railroad Valley, Nevada, USA.

On behalf of the Board of Directors,  
**MACARTHUR MINERALS LIMITED**

"Cameron McCall"  
Cameron McCall, Executive Chairman

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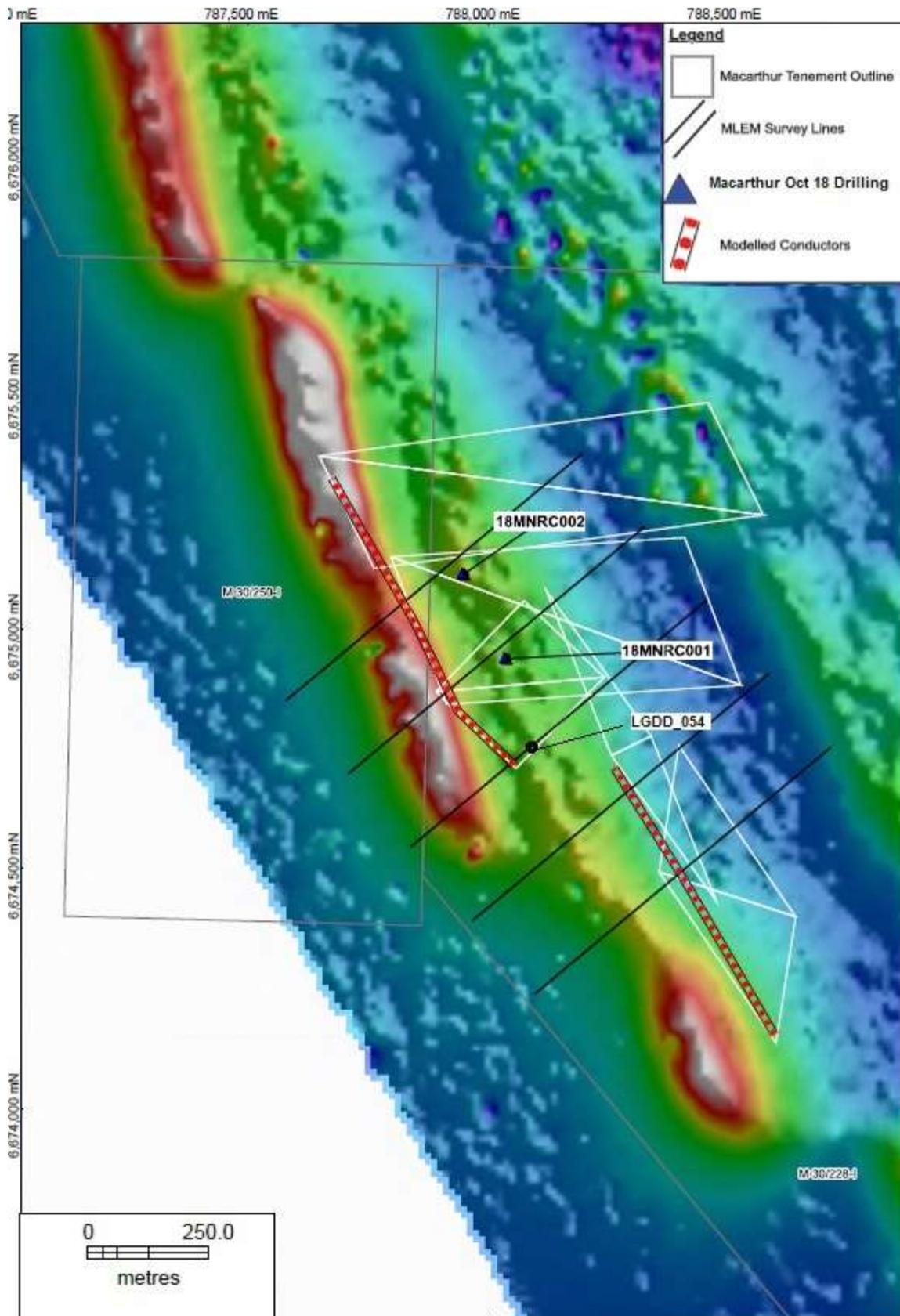


Figure 1. MLEM survey at Moonshine showing modelled conductors and location of RC drill holes. Background image shows magnetic anomalies.

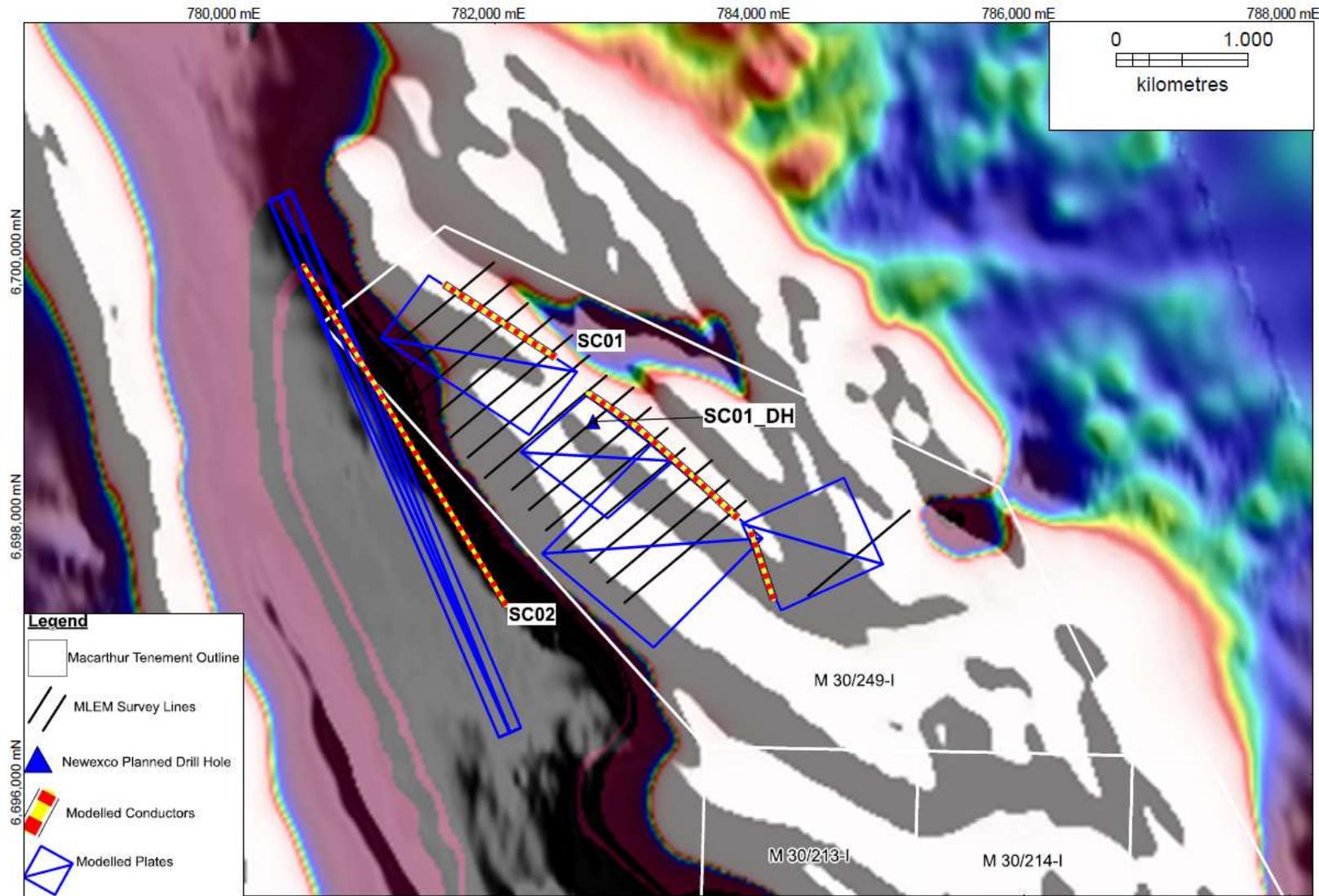


Figure 2. MLEM Survey at Snark showing modelled conductors. Background shows Total Magnetic Intensity anomalies