

LAKE JOHNSTON PROJECT UPDATE

KEY POINTS

• **Resumption of Lake Johnston Exploration**

- Poseidon has recommenced greenfields exploration activities at Lake Johnston, following a four-month hiatus whilst the Company was focused on the Lake Johnston sales process
- Numerous pegmatites have been identified and rock chip samples collected from within and proximal to an exciting broad, coherent >100ppm Li₂O anomaly reported by Poseidon in January 2024¹. Soil sampling planning to extend and infill the anomaly is underway
- The scale of the Lake Johnston open-ended lithium soil anomalies are already commensurate to other soil anomalies reported by peer lithium exploration companies working in the greater Lake Johnson region
- Planned surface sampling programs to continue onto the highly prospective Mantis Resources tenements that were recently acquired via the Farm-In Agreement in late December 2023. The tenements contain outcropping pegmatites with impressive grades of 2.80% up to 3.85% Li₂O²
- Preparation for Reverse Circulation drilling at Maggie Hays West is underway, a compelling greenfields nickel sulphide target with coherent, Ni-Cu-PGE regolith anomaly defined in shallow Aircore drilling over 1km. Best drill interval grading up to 2.37% Ni, 624ppm Cu and 353ppb Pt+Pd³

• **Proposed sale of Lake Johnston Project**

- Following positive Poseidon exploration releases at Lake Johnston over 2023, and with increased exploration activity in the greater area, Poseidon received interest in the project from a number of parties
- The Poseidon Board carefully considered all offers received, and on 15 March 2024 announced a Binding Heads of Agreement (**HoA**) to divest Lake Johnston to Mineral Resources Limited - subject to certain conditions precedent and other terms
- On 8 May 2024 the Company received a notice of termination from Mineral Resources Limited in respect of the Binding HoA
- Poseidon received a \$1.0 million non-refundable signing consideration

¹ Refer to ASX announcement, "Quarterly Report 31 December 2023", dated 30 January 2024

² Refer to ASX announcement, "Poseidon Enters Strategic Farm-in Over Lithium Bearing Pegmatites near Lake Johnston", dated 21 December 2023

³ Refer to ASX announcement, "Exploration & Gold Tailings Update", dated 18 December 2023

Poseidon Nickel Limited (ASX: POS, "the Company") provides an update on the Lake Johnston Project.

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CEO, Brendan Shalders, commented: *“We are very excited on the suite of quality lithium and nickel greenfields targets generated from recently completed low cost exploration programs at both the Lake Johnston and Windarra Projects. Based on the success of these programs, progressing our Greenfields exploration portfolio will continue as one of the key strategic pillars for the company moving forward.*

At Lake Johnston specifically, the Company has recently defined multiple broad anomalous lithium values (>100ppm) over a strike length of 3km, similar to levels reported by other exploration companies exploring for lithium bearing pegmatites in the region. With the recommencement of field activities, rock chip samples have been taken from numerous newly identified outcropping pegmatites in the southern Lake Johnston area. In addition, during late 2023 the Company entered into an Earn-in Agreement with Mantis Resources over tenements adjacent to the Company’s which host outcropping lithium bearing pegmatites returning high grades from 2.80% up to 3.85% Li₂O.

For nickel, our October 2023 shallow reconnaissance drilling program at the Maggie Hays West prospect confirmed a highly promising strong, 1km wide, coherent Ni-Cu-PGE regolith anomaly – a strong indicator of weathered nickel sulphides directly below.

As generative programs continue at Lake Johnston, we look forward to keeping the market informed as results come to hand. Any regional exploration success for lithium or nickel at/or near the Lake Johnston plant has the potential for this infrastructure to be a processing centre.

During early 2024 the Company received inbound interest from a number of parties in the Lake Johnston project. Following the consideration of various offers received, the Company entered into a Binding Heads of Agreement for Mineral Resources Limited (MRL) to acquire the project. Following this approach from MRL the Company deferred exploration activities at Lake Johnston to focus on progressing the sales process.

It was disappointing that nearing completion of the sale and purchase agreement MRL requested a renegotiation of the Binding Heads of Agreement on terms unacceptable to the Company and not in the best interest of Poseidon shareholders. MRL subsequently issued a notice of termination in respect of the Binding Heads of Agreement and the Company has reserved all its rights against MRL.”

Lake Johnston Project Update

Since the Company’s December 2023 quarterly report was released (see ASX announcement *“Quarterly Report 31 December 2023”* dated 30 January 2024) the Company’s exploration activities at Lake Johnston were put on hold as the Company focused on progressing the proposed sale of the project.

Lithium Potential at Lake Johnston

During late 2023 the Company commenced a review of the lithium potential at Lake Johnston, refer to ASX announcement *“Exploration & Gold Tailings Update”* dated 18 December 2023.

Data from soil sampling programs completed to delineate the extent of the Western Ultramafic Unit (WUU) were re-examined. The standout area was the southern-most portion of Lake Johnston. In-situ soils covering the WUU confirmed broad anomalous lithium values (>100ppm Li₂O) with corresponding rubidium (Rb) and caesium (Cs) anomalism in places over a strike length of 3km (Figure 1). This anomaly is open to the east and south-west where it continues underneath North Lake Hope. The lithium levels in the soils are similar to levels recently reported by other exploration companies exploring for lithium bearing pegmatites in the Lake Johnston region.

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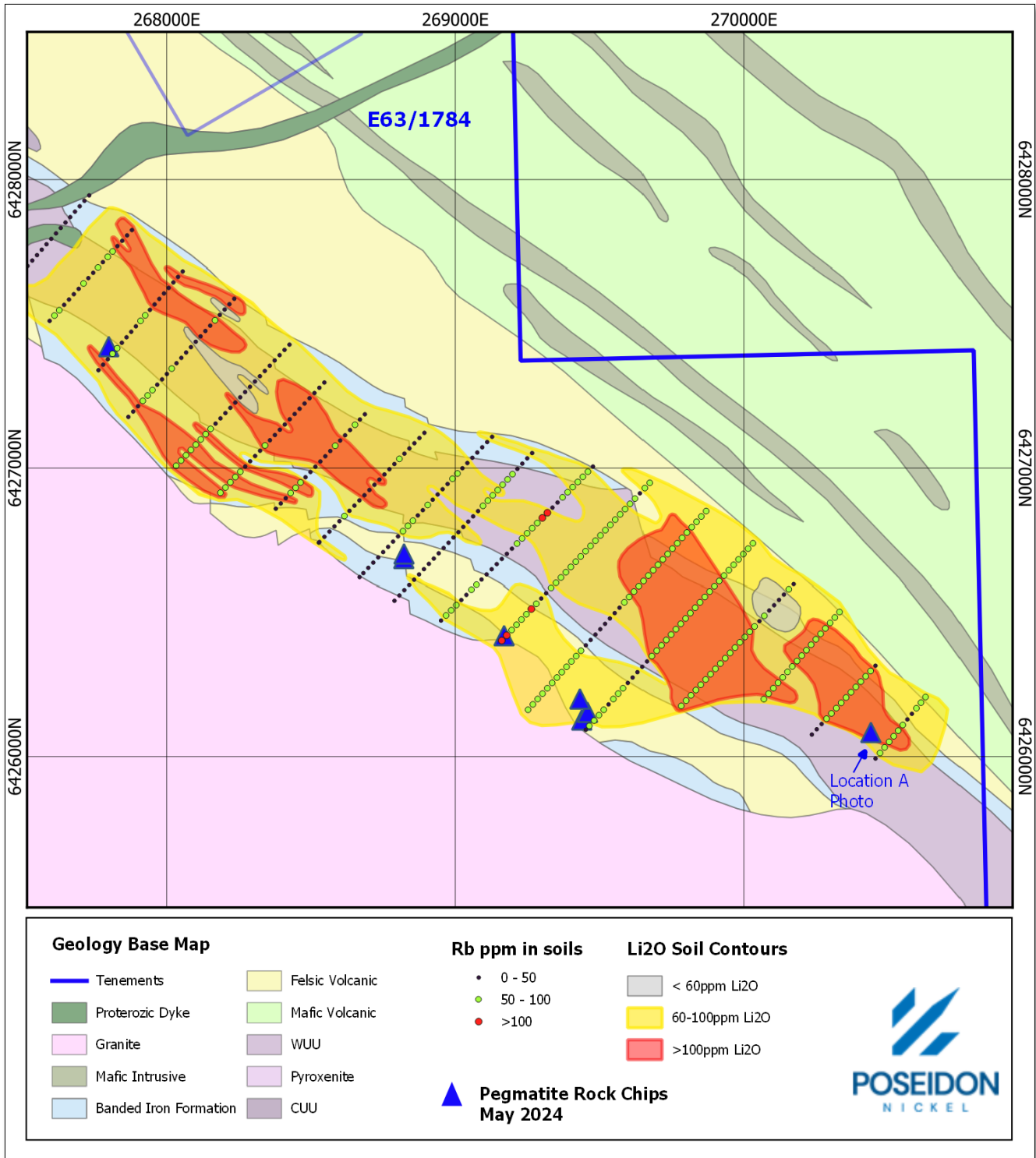


FIGURE 1: SOILS LOCATED IN THE SOUTHERN PORTION OF THE PROJECT AREA SHOWING Li₂O CONTOURS AND COINCIDENT RUBIDIUM ANOMALISM WITHIN A RESIDUAL SOIL PROFILE AND RECENT PEGMATITE ROCK CHIP SAMPLING

In May 2024, recent mapping within the soil anomaly revealed isolated outcrops of pegmatite, marking an important step in underpinning the likely source of the soil anomaly. Rock chip samples from these isolated pegmatites exposures have been collected and sent for analysis. The area, characterised by thin soils and transported cover, suggests hidden pegmatites might be widespread, offering ample opportunity for potential fractionation processes to occur and the development of spodumene zones within the targeted “goldilocks zones”. Results are anticipated to be received next month.



FIGURE 2: LOCATION A, ISOLATED PEGMATITE OUTCROPS WITHIN THE LARGER COINCIDENT LI-RB-CS ANOMALY AT LAKE JOHNSTON

Further to the above, the Company entered into a Farm-in Agreement with Mantis Resources Pty Ltd to earn up to a 100% interest in exploration licences 63/2244 and 63/2256 which are located in close proximity to the Lake Johnston Project (shown in Figure 3).

A summary of the key terms for the Farm-In Agreement are included in ASX announcement “*Poseidon Enters Strategic Farm-In Over Lithium Bearing Pegmatites Near Lake Johnston*”, dated 21 December 2023.

The tenements contain high grade lithium bearing pegmatites, with composite samples from outcropping pegmatite exposures returning assay results grading from 2.80% to 3.85% Li_2O (refer to ASX announcement “*High Grade Lithium Bearing Pegmatites Located at Lake Johnston*” dated 23 May 2016). These outcropping lithium pegmatites were, at the time, within exploration license E63/1067 which was formerly registered to Poseidon and was subsequently compulsory surrendered.

Soil sampling programs are close to being finalised to infill and extend the exciting broad, coherent $>100\text{ppm}$ Li_2O anomaly in the southern area of Lake Johnston and furthermore, these surface sampling programs are to continue onto the highly prospective Mantis Resources tenements.

Results of these programs will be announced as soon as they come to hand.

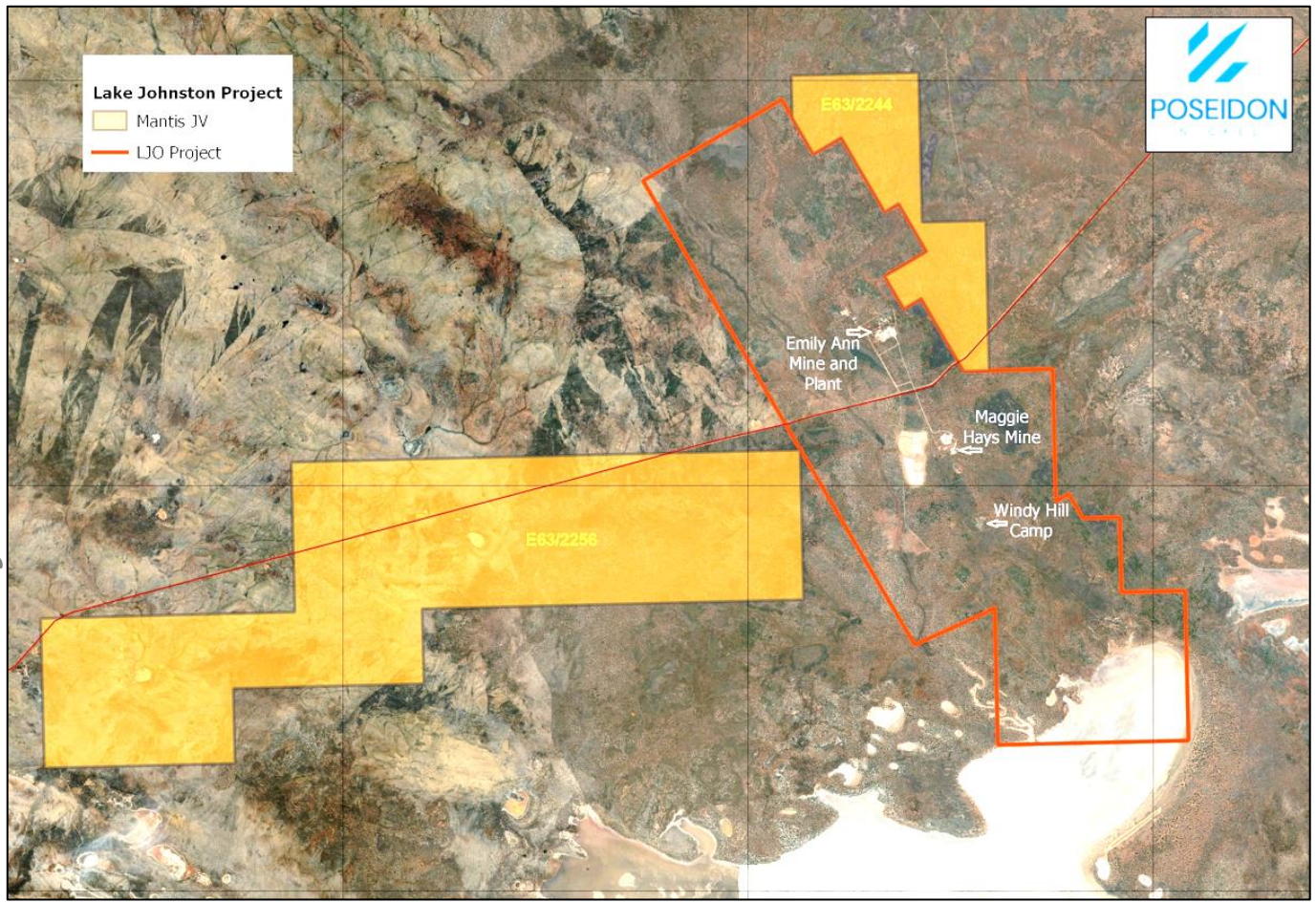


FIGURE 3: LOCATION OF FARM-IN TENEMENTS (E63/2244 AND E63/2256) IN PROXIMITY TO LAKE JOHNSTON PROJECT

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Maggie Hays West Nickel Prospect

During 2023 the Company completed an aircore (AC) and shallow reverse circulation (RC) drilling program to progress several highly promising greenfields targets along the Western Ultramafic Unit (WUU) and at Maggie Hays West.

At Maggie Hays West, a compelling greenfields nickel sulphide target has been defined with coherent, Ni-Cu-PGE regolith anomaly confirmed in shallow AC drilling over 1km sitting over the basal contact within the WUU. The best drill interval returned up to 2.37% Ni, 624ppm Cu and 353ppb Pt+Pd over 1m and provides a compelling target (refer to ASX Announcement “*Exploration & Gold Tailings Update*” dated 18 December 2023).

Testing of the Maggie Hays West anomaly and associated WUU “channel-like” zone warrants further exploration efforts and planning is underway for the next stages of the work programs which will likely include RC drilling (Figure 4).

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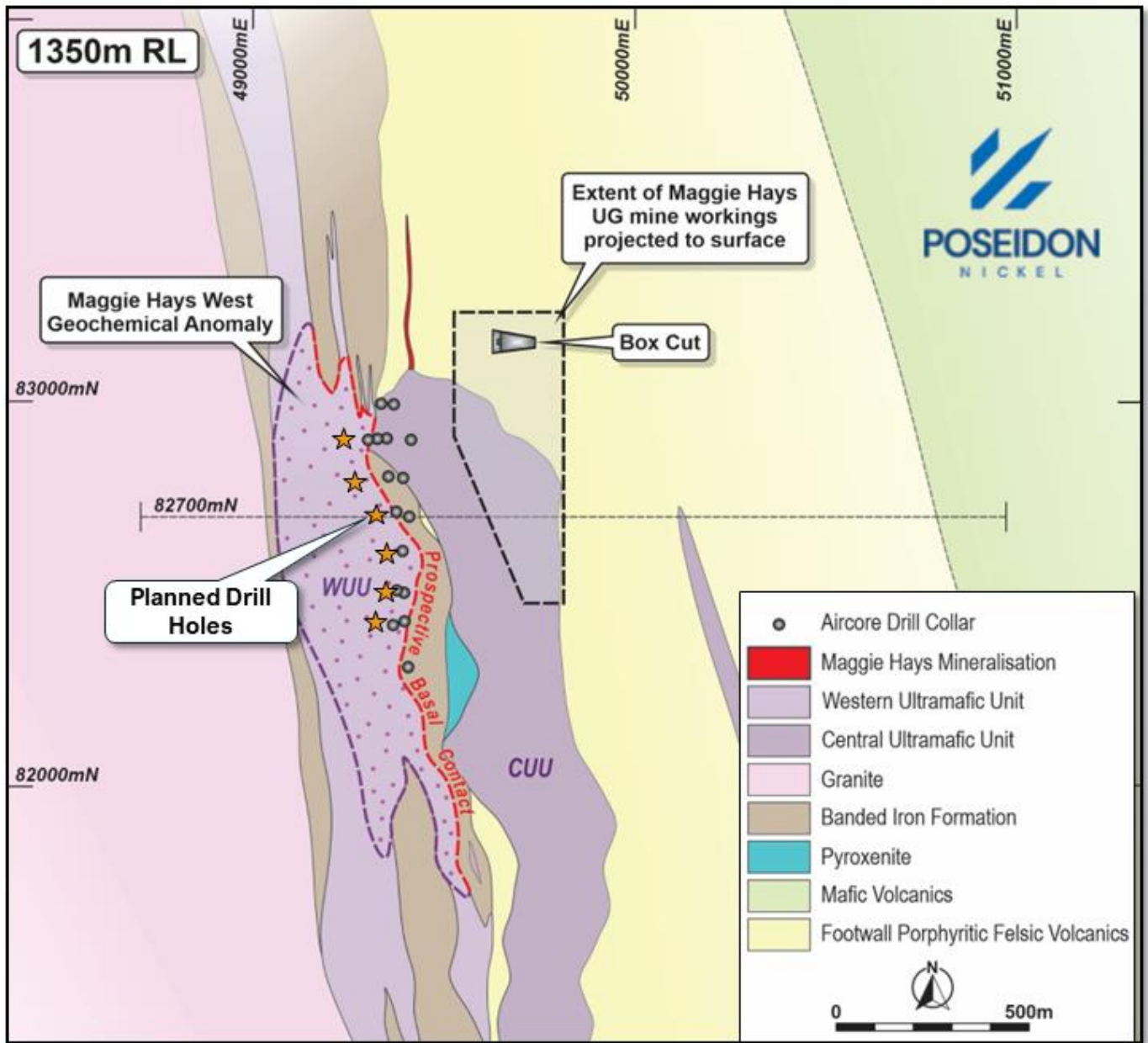


FIGURE 4: PROPOSED MAGGIE HAYS WEST DRILLING PROGRAM

Proposed Sale of Lake Johnston Project

Following positive market releases relating to exploration results at Lake Johnston from works completed over 2023, and with increased exploration activity in the greater area, the Company received interest from a number of parties in the project.

The Poseidon Board carefully considered all offers received, and on 15 March 2024 the Company entered into a Binding Heads of Agreement (**HoA**) to divest Lake Johnston to Mineral Resources Limited (**MRL**), subject to certain conditions precedent and other terms – see full announcement “*Binding Heads of Agreement for the Sale of Lake Johnston*” dated 18 March 2024.

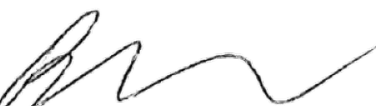
Following entering the Binding HoA, the Company released two further announcements regarding the proposed sale of Lake Johnston on 30 April 2024 and 9 May 2024 (see ASX Announcements, “*Update on proposed sale of Lake Johnston*”, dated 30 April 2024, and “*Update on proposed sale of Lake Johnston*”, dated 9 May 2024).

As stated in Poseidon’s update provided on 30 April 2024, MRL requested for the Company to consider renegotiating the transaction on terms different to the Binding HoA. In the Board’s opinion, the terms suggested by MRL were materially different to the agreed transaction and considered not to be in the best interests of

Poseidon shareholders. The Board communicated to MRL that it remained open to further negotiations provided that the terms of any renegotiated transaction were closer to and aligned with the Binding HoA. On 8 May 2024, the Company received a notice of termination from MRL in respect of the Binding HoA for which the Company reserves all its rights.

With the Lake Johnston project now remaining within the Company's portfolio, the Board believes it has significant potential and opportunities for future value accretion within the company's tenure and surrounding tenements.

This announcement was authorised for lodgement by the Board of Poseidon Nickel Limited.



Brendan Shalders
Chief Executive Officer

17 May 2024

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About Poseidon Nickel Limited

Poseidon Nickel Limited (ASX Code: POS) is a nickel sulphide exploration and development company with three projects located within a radius of 300km from Kalgoorlie in the Goldfields region of Western Australia and a resource base of over 420,000 tonnes of nickel and 180,000 ounces of gold¹.

Poseidon's strategy is focused on the exploration and eventual restart of its established nickel operations in Western Australia with the aim of being a profitable and sustainable nickel producer. A critical element of this strategy has been owning operations with significant existing infrastructure, large nickel resources and geological prospectivity likely to lead to resource growth through the application of modern exploration techniques.

Poseidon owns the Black Swan, Windarra Nickel and Lake Johnston Projects. In addition to the mines and infrastructure including the concentrator at Black Swan, these projects have significant exploration opportunities demonstrated by the discovery of the Golden Swan Resource at Black Swan, Maggie Hays West prospect at Lake Johnston and more recently the NW05 and NW04 targets at Windarra.

The Company completed a Bankable Feasibility Study on Black Swan in November 2022 which is planned to be the first project to restart, subject to appropriate project financing structures being achieved, the outlook for the nickel price improving and all necessary approvals being obtained.

A Definitive Feasibility Study on retreating the gold tailings at Windarra and Lancefield was completed in mid-2022. In December 2023 Mt Morgans entered into a trial processing agreement with Poseidon on the Lancefield gold tailings and accessing the water in the South Windarra pit.

¹ Refer to the Company website, www.poseidon-nickel.com.au, for Resource and Reserves tables