Ardea Resources Limited

ASX & Media Release

21 August 2023

ASX Symbol

ARL

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Issued Capital

Fully Paid Ordinary Shares
171,894,772

Performance Rights
6,690,000

Options
4,000,000

ABN 30 614 289 342

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Highway EIS Nickel Sulphide Drillhole

Highlights

- Through its Goongarrie Hub tenement holding, Ardea has a dominant land position over the Walter Williams Formation and through CSIRO research and the Exploration Incentive Scheme funding has the opportunity to test a nickel sulphide hypothesis
- A single diamond drillhole, AHID0024, has commenced at the Highway Project testing the nickel sulphide prospectivity of the Walter Williams Formation ultramafic and to also further understand alteration of the ultramafics by felsic hydrothermal events
- The drillhole is planned to 500m depth and will then be cased as a platform for a downhole electromagnetic survey
- The drillhole is part funded by the Geological Survey of Western Australia's Exploration Incentive Scheme, targeting the western basal contact of the Walter Williams Formation
- Joint research into the Walter Williams Formation by Ardea and CSIRO has indicated potential nickel sulphide prospectivity in a unit historically thought to solely host nickel laterite mineralisation

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Ardea Resources Limited (**Ardea** or the **Company**) is pleased to provide an update on its nickel sulphide exploration within its Kalgoorlie Nickel Project (**KNP**) in the Eastern Goldfields of Western Australia.

Ardea has commenced drilling a single diamond hole (Table 1) at its Highway Nickel Project located 105km north of the City of Kalgoorlie-Boulder. This program is part funded by the Geological Survey of Western Australia's Exploration Incentive Scheme (**EIS**), which will fund up to $112,500 of the drilling costs.

Managing Director and CEO Andrew Penkethman noted:

"Ardea has a strategic and dominant ground holding over the Walter Williams Formation stratigraphy within its Goongarrie Hub tenements. This is the dominant ultramafic unit that hosts Ardea's nickel-cobalt-scandium laterite deposits.

Collaborative research undertaken by the Ardea exploration team with the Commonwealth government CSIRO has determined that the western basal contact of the Walter Williams Formation is prospective for nickel sulphide mineralisation.

A nickel sulphide target has been defined on the western edge of Ardea's Highway laterite deposit and with funding support from the Geological Survey of Western Australia's Exploration Incentive Scheme, drilling has commenced.

Any discovery success would open a new search space for which Ardea has a first mover advantage.

While Ardea's sole priority is the development of the Kalgoorlie Nickel Project Goongarrie Hub nickel-cobalt laterite operation, our Kalgoorlie Nickel Project tenements also have significant Battery and Critical Mineral complementary exploration potential that offer an internal pipeline of additional potential growth opportunities that will continue to be evaluated in a prudent and cost-effective manner."

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Discussion

The dominant ultramafic unit present in the Goongarrie Hub is the Walter Williams Formation (**WWF**), a distinctive olivine cumulate unit which weathers to nickel laterite. This unit dominantly hosts Ardea's KNP which based on a 0.5% Ni cut-off grade contains 854Mt at 0.71% Ni and 0.045% Co (for **6.1Mt of contained nickel** and **386kt of contained cobalt**). Based on whole rock geochemistry and preserved mineral textures, the WWF is likely a lava lake or dunite sheet facies komatiite sequence. However, recent and historic research suggests there may be nickel sulphide potential deeper in the fresh rock of the WWF which has previously been overlooked.

Ardea has ongoing nickel sulphide and gold research projects with Australia's pre-eminent scientific research organisation, the Commonwealth Scientific and Industrial Research Organisation (**CSIRO**), researching criteria for evaluating nickel sulphide fertility and the behaviour of gold within and adjacent to the Critical Mineral deposits of the Goongarrie Hub (ASX announcements 12 August 2020, 30 September 2020, 24 May 2021). Recent research work on the WWF by the CSIRO as part of their 'Indicator Minerals for Nickel Sulphide' project identified low ruthenium signatures (<150ppb) in chromite* and also nickel and copper depletion in olivine, both suggesting possible sulphide saturation. Research by a consultant geologist for Heron Resources in 2004 also identified trace nickel sulphides in photomicrograph studies (Figure 1).

The above Indicators occur in drill holes proximal to the western contact of the WWF which is interpreted as the basal contact. In addition, historic moving loop electromagnetic (**MLEM**) surveys identified a subtle unconstrained plate on this western contact (Figure 2). The plate model geometry could not be constrained so the drillhole is also required as a platform for a downhole electromagnetic (**DHEM**) survey.

The part-funded EIS hole currently being drilled (Figure 3) has been designed to test the WWF basal contact in this area and also to extend beyond the interpreted contact to investigate potential hydrothermal alteration systems associated with discrete alkaline felsic intrusives within the WWF. The intrusives when intersected in shallow nickel laterite drilling are distinctive white clays with a signature alteration mineral identified in Ardea R&D as sepiolite. The sepiolite-hosted nickel laterite has a distinctive cobalt-manganese-copper (Co-Mn-Cu) signature.

Table 1: Current drillhole testing the WWF for nickel sulphide prospectivity.

Drillhole	Easting GDA94-51	Northing GDA94-51	RL	Dip	Azimuth (magnetic)	Planned Depth (m)
AHID0024	6698050	313850	406	-55	90	500

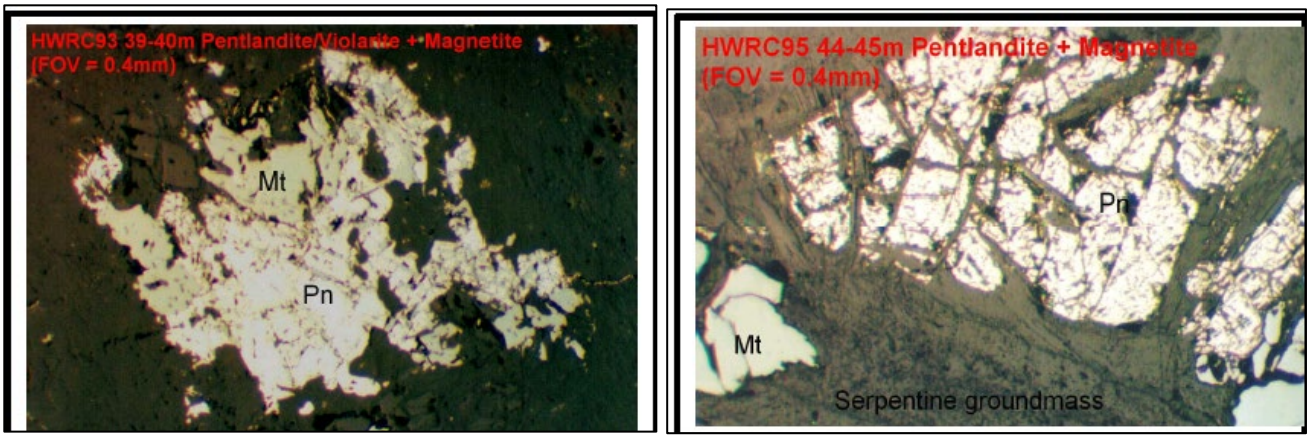

Figure 1: Highway photomicrographs of trace nickel sulphides in HWRC0093 fresh chips (39-40m) on left and HWRC0095 fresh chips (44-45m) on right, with Pn = Pentlandite and Mt = Magnetite (ASX release 30 September 2020). Location of drillholes shown in Figure 2.

* i.e. Locmelis, M. et al 2013. Ruthenium Variation in Chromite from Komatiites and Komatiitic Basalts—A Potential Mineralogical Indicator for Nickel Sulfide Mineralization. Economic Geology. Volume 108, Number 2: Pages 355-364.

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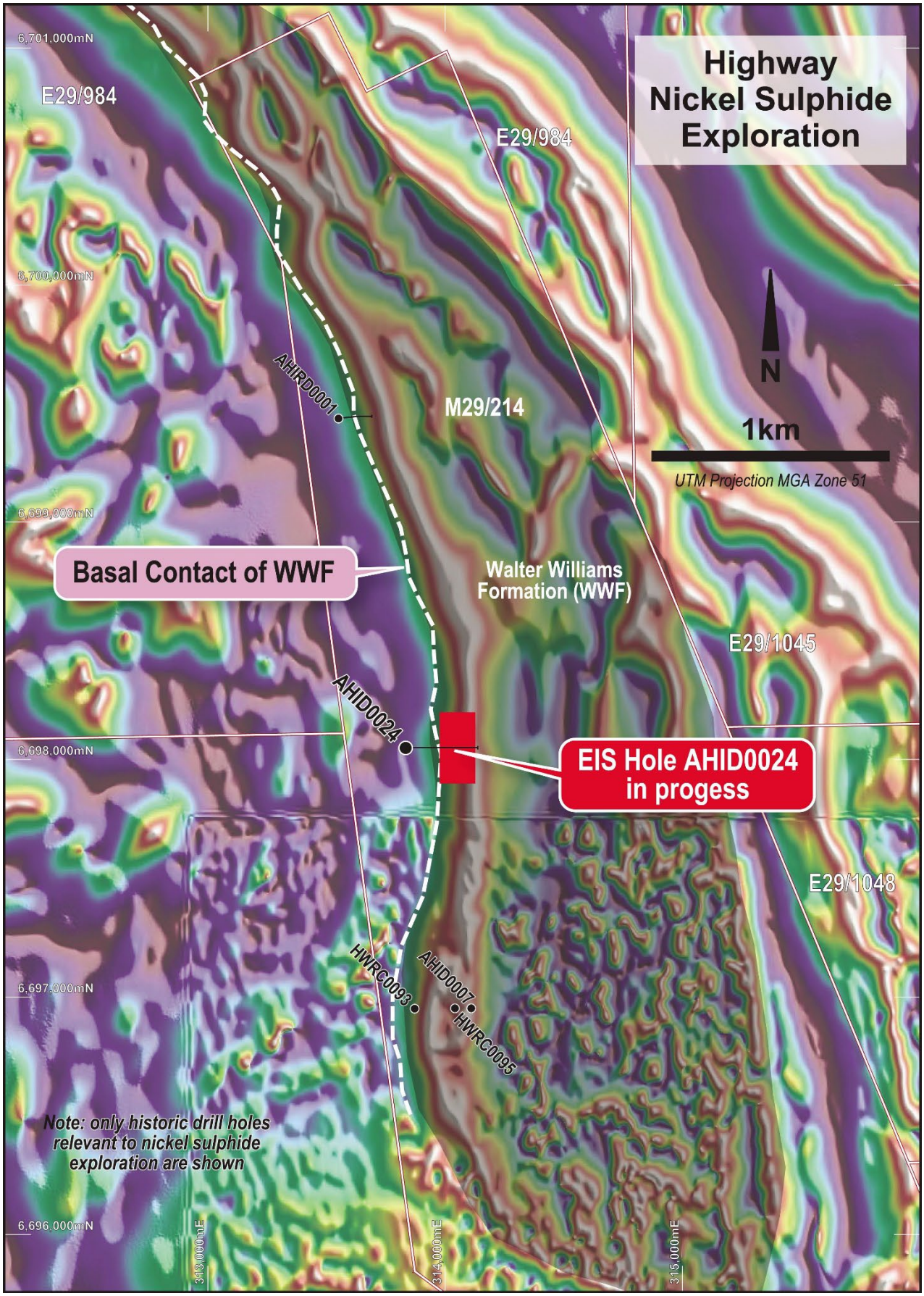

Figure 2: Map of the Highway prospect, showing current drillhole AHID0024, historic drillholes, HWRC0093 and HWRC0095 with trace nickel sulphides, MLEM plate (red) and interpreted Walter Williams Formation over aeromagnetics. Projection GDA94 Zone 51.

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Figure 3: Diamond drill rig supplied by DDH1 drilling AHID0024 at the Highway prospect.

This announcement is authorised for release by the Board of Ardea Resources Limited.

For further information regarding Ardea, please visit https://ardearesources.com.au/ or contact:

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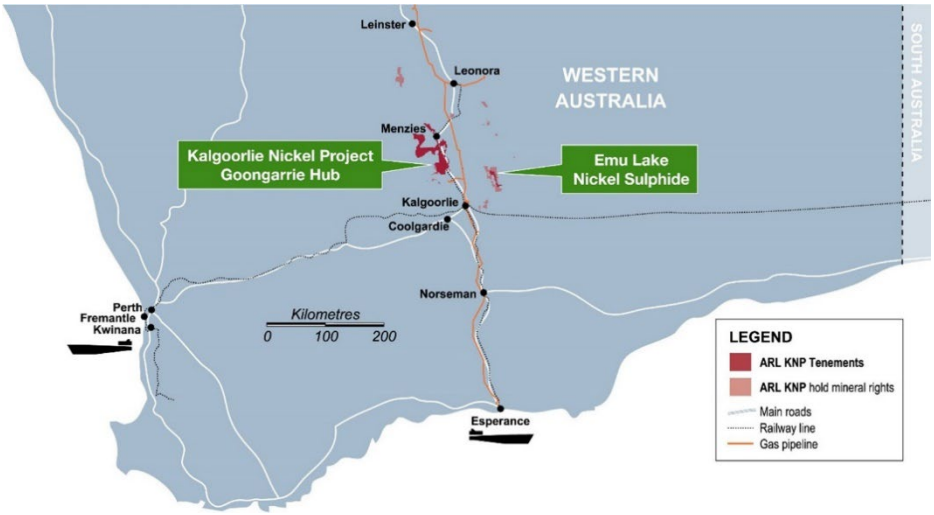
About Ardea Resources

Ardea Resources Limited (ASX:ARL) is an ASX-listed nickel resources company, with a large portfolio of 100%-controlled West Australian-based projects, focussed on:

- Development of the Kalgoorlie Nickel Project (**KNP**) and its sub-set the Goongarrie Hub, a globally significant series of nickel-cobalt and Critical Mineral deposits which host the largest nickel-cobalt resource in the developed world at **854Mt at 0.71% Ni and 0.045% Co for 6.1Mt of contained nickel and 386kt of contained cobalt** (Ardea ASX release 30 June 2023), located in a jurisdiction with exemplary Environmental Social and Governance (**ESG**) credentials, notably environment.
- Advanced-stage exploration at compelling nickel sulphide targets, such as Emu Lake, and Critical Minerals targets including scandium and Rare Earth Elements throughout the KNP Eastern Goldfields world-class nickel-gold province, with all exploration targets aimed at complementing the KNP nickel development strategy.

Ardea's KNP development with its 6.1 million tonnes of contained nickel is the foundation of the Company, with the nickel sulphide exploration, such as Emu Lake, as an evolving contribution to Ardea's building of a green, forward-facing integrated nickel company.

Electric Vehicle and Energy Storage System lithium-ion battery customers demand an ESG-compliant, sustainable, and ethical supply chain for nickel and other inputs. Unlike the wet tropics, where HPAL submarine tailings disposal and rain forest habitat destruction are problematic, the semi-arid, temperate KNP is located in the Great Western Woodlands that is an environment amenable to best practice progressive disposal of tailings in open pit voids. The KNP is located in one of the world's premier mining jurisdictions with unquestionable geopolitical acceptance (WA ranked 2nd in the Fraser Institute Investment Attractiveness index) and none of the land-use and societal conflicts that commonly characterise nickel laterite proposals elsewhere. All KNP Goongarrie Hub production tenure is on granted Mining Leases with Native Title Agreement in place.



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CAUTIONARY NOTE REGARDING FORWARD-LOOKING INFORMATION

This news release contains forward-looking statements and forward-looking information within the meaning of applicable Australian securities laws, which are based on expectations, estimates and projections as of the date of this news release.

This forward-looking information includes, or may be based upon, without limitation, estimates, forecasts and statements as to management's expectations with respect to, among other things, the timing and amount of funding required to execute the Company's exploration, development and business plans, capital and exploration expenditures, the effect on the Company of any changes to existing legislation or policy, government regulation of mining operations, the length of time required to obtain permits, certifications and approvals, the success of exploration, development and mining activities, the geology of the Company's properties, environmental risks, the availability of labour, the focus of the Company in the future, demand and market outlook for precious metals and the prices thereof, progress in development of mineral properties, the Company's ability to raise funding privately or on a public market in the future, the Company's future growth, results of operations, performance, and business prospects and opportunities. Wherever possible, words such as "anticipate", "believe", "expect", "intend", "may" and similar expressions have been used to identify such forward-looking information. Forward-looking information is based on the opinions and estimates of management at the date the information is given, and on information available to management at such time.

Forward-looking information involves significant risks, uncertainties, assumptions, and other factors that could cause actual results, performance, or achievements to differ materially from the results discussed or implied in the forward-looking information. These factors, including, but not limited to, the ability to create and spin-out a gold focussed Company, fluctuations in currency markets, fluctuations in commodity prices, the ability of the Company to access sufficient capital on favourable terms or at all, changes in national and local government legislation, taxation, controls, regulations, political or economic developments in Australia or other countries in which the Company does business or may carry on business in the future, operational or technical difficulties in connection with exploration or development activities, employee relations, the speculative nature of mineral exploration and development, obtaining necessary licenses and permits, diminishing quantities and grades of mineral reserves, contests over title to properties, especially title to undeveloped properties, the inherent risks involved in the exploration and development of mineral properties, the uncertainties involved in interpreting drill results and other geological data, environmental hazards, industrial accidents, unusual or unexpected formations, pressures, cave-ins and flooding, limitations of insurance coverage and the possibility of project cost overruns or unanticipated costs and expenses, and should be considered carefully. Many of these uncertainties and contingencies can affect the Company's actual results and could cause actual results to differ materially from those expressed or implied in any forward-looking statements made by, or on behalf of, the Company. Prospective investors should not place undue reliance on any forward-looking information.

Although the forward-looking information contained in this news release is based upon what management believes, or believed at the time, to be reasonable assumptions, the Company cannot assure prospective purchasers that actual results will be consistent with such forward-looking information, as there may be other factors that cause results not to be as anticipated, estimated or intended, and neither the Company nor any other person assumes responsibility for the accuracy and completeness of any such forward-looking information. The Company does not undertake, and assumes no obligation, to update or revise any such forward-looking statements or forward-looking information contained herein to reflect new events or circumstances, except as may be required by law.

No stock exchange, regulation services provider, securities commission or other regulatory authority has approved or disapproved the information contained in this news release.

Competent Persons statement

The information in this report that relates to planning for nickel sulphide exploration is based on information reviewed or compiled by Matthew McCarthy, who is a Member of the Australian Institute of Geoscientists. Mr McCarthy is a full-time employee of Ardea Resources Limited and has sufficient experience which is relevant to 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 Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr McCarthy consents to the inclusion in this report of the information in the form and context in which it appears.

Ardea wishes to clarify that its current Kalgoorlie Nickel Project (KNP) Mineral Resource Estimate (MRE) following JORC Code (2012) guidelines is:

Camp	Resource Category	Size (Mt)	Ni (%)	Co (%)	Contained Metal Ni (kt)	Contained Metal Co (kt)
KNP TOTAL	Measured	22	0.94	0.079	207	17
	Indicated	361	0.73	0.047	2,622	169
	Inferred	471	0.70	0.043	3,272	200
GRAND TOTAL	***Combined***	***854***	***0.71***	***0.045***	***6,101***	***386***

Note: 0.5% nickel cutoff grade used to report resources. Minor discrepancies may occur due to rounding of appropriate significant figures.

The Mineral Resource Estimate information shown in this ASX release has been previously released on the ASX platform by Ardea in ASX release 30 June 2023, in accordance with Listing Rule 5.8.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the previous market announcement noted above and that all material assumptions and technical parameters underpinning the Mineral Resource Estimate in the previous market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original market announcements.