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Ardea Resources Limited

ASX & Media Release

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ASX Symbol

ARL

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Fully Paid Ordinary Shares
138,830,219

Performance Rights
4,771,000

Options
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ABN 30 614 289 342

Emu Lake Nickel Sulphide Discovery confirmed with 2.72m at 5.42% Ni

- **Emu Lake core hole, AELD0003, has confirmed a high-grade massive nickel-copper-PGE sulphide discovery on an intact felsic footwall contact.**
- Significant results from this round of drilling include:
  - AELD0003: **2.72m at 5.42% Ni and 0.85% Cu** from 391.04m
    including **1.23m at 8.22% Ni and 0.56% Cu** from 391.04m
- **Following detailed interpretation, this high grade massive sulphide intersection has delineated a new fertile target horizon, the "Western Ultramafic-Dacite contact."**
- Ardea 2021 results drilled into this same channel system include:
  - AELD0002: **4.8m at 1.44% Ni and 0.16% Cu** from 365.9m
    including ***1.10m at 4.78% Ni and 0.16% Cu*** *from 366.9m* (ASX release 10 June 2021)
  - AELD0001: **0.65m at 2.95% Ni and 0.08% Cu** from 336.7m (ASX 2/3/21)
- **Results confirm a fertile nickel sulphide horizon, the Western Ultramafic:**
  - AELD0003 is showing increased massive nickel (**Ni**) and copper (**Cu**) sulphide grade and thickness on an intact, basal dacite contact (Figure 1 and 2)
  - High grade massive sulphides up to 8.3% Ni, with mineralisation open in all directions
  - The fertile horizon, the "Western Ultramafic," opens a new exploration search space, with Ardea controlling 20km of strike on this compelling target zone
- **Follow-up**
  - An Exploration Incentive Scheme (EIS) diamond hole (co-funded with the WA government) has been approved to test the down plunge extension of AELD0003. Drill commencement will be subject to rig availability.
  - CSIRO collaborative research is studying nickel sulphide mineralisation at Emu Lake and is aimed at vectoring towards massive sulphide within Ardea's extensive Eastern Goldfields tenement holding.

Figure 1: AELD0003, NQ2 drill core from 391.04m showing the dacite footwall contact and thermal erosion on the left hand side of the photo and high grade massive nickel sulphide on the right hand side of the image.

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Following the receipt of assay results from drill core hole AELD0003, Ardea Resources Limited (**Ardea** or the **Company**) confirms a massive nickel sulphide discovery at its Kalpini Project, 70km northeast of Kalgoorlie, Western Australia (Figures 1, 2 and 3).

Ardea's Managing Director, Andrew Penkethman, said:

"The focus of historic Emu Lake exploration has been the Binti Gossan prospect area, 1km north of Ardea's Western Ultramafic channel discovery.

The Western Ultramafic is a separate and distict high-magnesium ultramafic flow that was not prioritised by past explorers, presumbaly due to an absence of surface gossans as seen at the Binti Gossan.

With the recently received assay results from core hole AELD0003 confirming high grade nickel sulphides located on an intact basal dacite contact with komatiite, we now have three adjoining drill holes with nickel sulphide mineralisation on the same contact which conclusively confirms that a discovery has been made.

Importantly, the interpreted 3D geometry of the AELD0003 discovery suggests the mineralisation is open in all directions for further drill exploration.

With Ardea holding 20km of fertile komatiite strike at Emu Lake, there is significant scope to extend this nickel sulphide discovery and make additional discoveries.

I acknowledge the Ardea team and partners such as CSIRO and Newexco for their input which has assisted in developing the Emu Lake "Thermal Erosion" nickel sulphide model which is a major exploration breakthrough for the Company, as it has opened up a new search space."

Figure 2: AELD0003, NQ2 drill core showing massive sulphide zone (391.04 – 393.76) and adjacent zones which exhibit high competency (solid core) and high recoveries. The core competency and lack of talc-chlorite shearing augurs well for good mining ground conditions. Note the down hole depth metre marks shown in black on the core trays.

Kalpini Project - Emu Lake Nickel Sulphide Prospect

Ardea's Kalpini Project covers over 121km^2, with the leading nickel sulphide target, Emu Lake, located 70km north-east of the City of Kalgoorlie-Boulder (Figure 3). This strategic tenement package contains 20km strike of prospective ultramafic stratigraphy held 100% by Ardea and mostly within granted mining leases. The project is 35km east of the Black Swan Nickel Project (Silver Swan nickel mine), operated by Poseidon Nickel Ltd, within a parallel komatiite volcanic belt.

The exploration model being applied by Ardea is similar to that modelled at the Silver Swan nickel sulphide mine (Figure 3). Silver Swan has a strike length near surface of less than 50m, but a plunge extent of over 1,000m and features very high-grade zones of massive nickel sulphide.

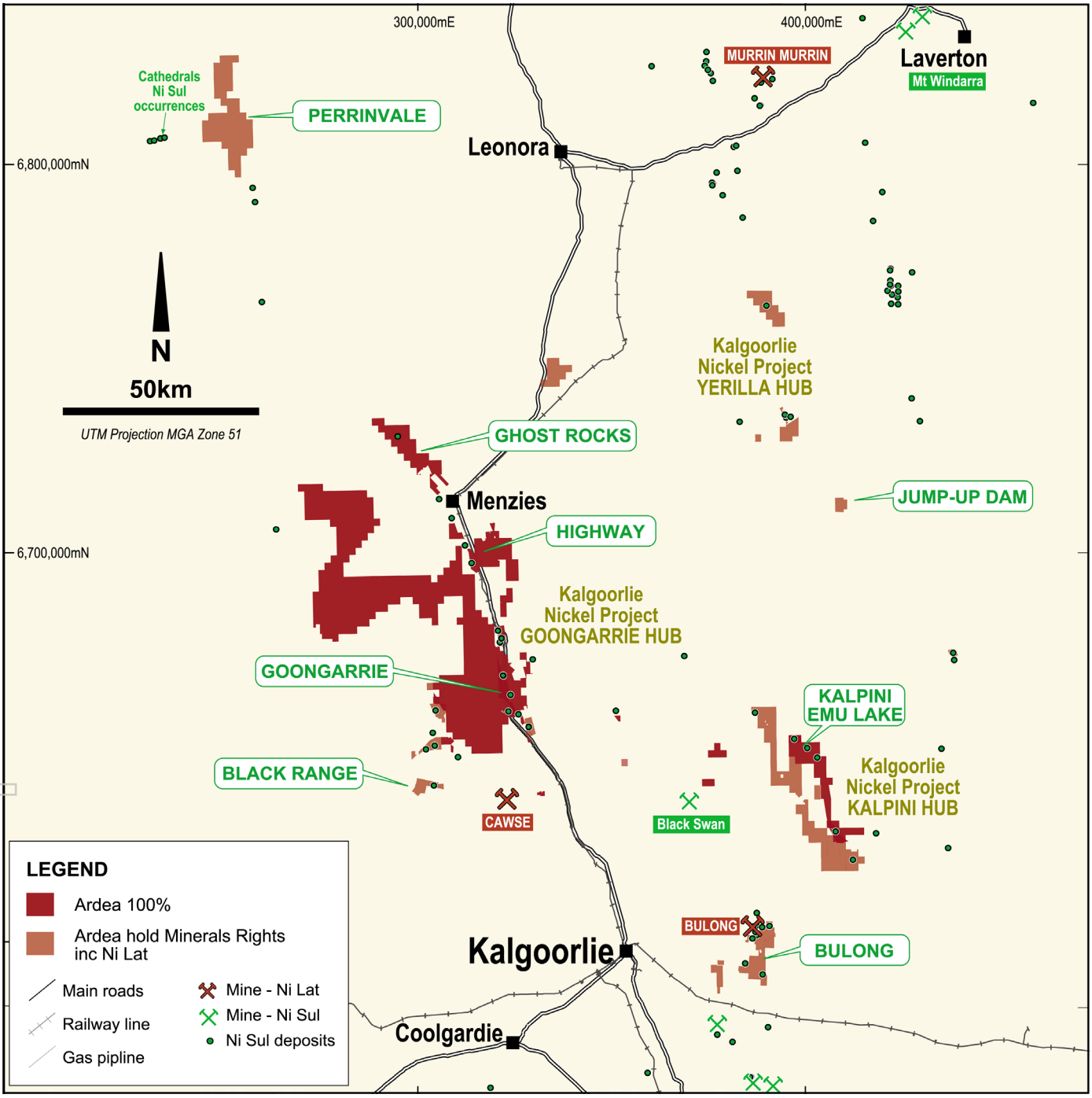

Figure 3: Ardea tenement plan highlighting the location of the Kalpini Project, Emu Lake Prospect and nickel mines and deposits in the region. Projection MGA 94 Zone 51.

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Defining the Emu Lake Western Ultramafic nickel sulphide discovery

Ardea drill hole AELD0001, was drilled in February 2021 to follow-up on an historic Down Hole Electromagnetic (**DHEM**) plate that had not been previously drill tested. This hole intersected a narrow zone of nickel sulphide (Ardea ASX release 2 March 2021). A DHEM survey completed in AELD0001 defined an off-hole conductor for drill testing. To test the strong (8,000 siemens) DHEM conductor, diamond drillhole AELD0002 was drilled and intersected a basal nickel sulphide occurrence (ASX release 10 June 2021) and returned assays of:

- **1.1m at 4.78% Ni**, 0.16% Cu, 0.47g/t Pt, 0.20g/t Pd from 366.9m downhole consisting of semi-massive and matrix-style nickel sulphides, within a broader zone of:
- **4.8m at 1.44% Ni**, 0.09% Cu, 0.20g/t Pt, 0.09g/t Pd from 365.9m depth.

This intersection confirmed the prospectivity of the Western Ultramafic that has received little attention in the past with most historic drilling concentrated on the Binti Gossan Main Zone 1km to the north. Although nickel sulphide has previously been intersected below the outcropping Binti Gossan, it consists of mainly remobilised stringer sulphides.

To follow-up on the nickel sulphide results in AELD002, a DHEM survey was completed which defined a strong off-hole conductor directly south and below the AELD002 nickel sulphide intercept, providing a drill target.

AELD003 was drilled in late November 2021 to a depth of 450m to test this DHEM plate (ASX release 3 December 2021). From a depth of 391.04m the following nickel sulphide zones were intersected (Figure 1 and 2):

- **1.23m at 8.22% Ni**, 0.56% Cu, 0.46g/t Pt, 0.31g/t Pd from 391.04m downhole consisting of massive nickel sulphides, within a broader zone of:
- **2.72m at 5.42% Ni,** 0.85% Cu, 0.58g/t Pt, 0.27g/t Pd from 391.04m downhole consisting of massive, semi-massive, disseminated and matrix nickel sulphide.

The host volcanic sequence is over-turned; hence the massive sulphide being intersected in drilling above the disseminated sulphides.

A detailed breakdown of the stratigraphy and geochemical data is shown in Table 1.

Significant project upside

In “Silver Swan style” nickel sulphide systems (as Emu Lake clearly is), the exploration methodology is to define a komatiite volcanic flow channel system, then determine whether the system is fertile for nickel sulphides. The results for AELD0003 confirm an exceptionally fertile system, entirely comparable to that documented for Silver Swan.

Of significance in terms of exploration model, the Emu Lake massive nickel sulphide is predominantly hosted by an underlying (before fold overturning), highly altered pyrite-arsenopyrite bearing dacite (termed the Footwall Dacite).

Current CSIRO theory supports the "**Thermal Erosion Model**" where concentrations of massive nickel sulphide accumulate at the base of an ultramafic lava flow (Figure 1). Key conditions believed to contribute to these nickel sulphide accumulations include a very hot, very turbulent lava flow, that scours and mixes high sulphide bearing basement rock into the flow. A preserved intact basal contact in the AELD0003 massive sulphides supports a Thermal Erosion Model, which is believed to be the mechanism for mineralisation in both the Emu Lake and Silver Swan areas.

The DHEM conductor from AELD0002 was stronger than that seen in AELD0001 and in light of the increased quantity of massive nickel sulphide observed in AELD0003, when compared to AELD002, indicates that the extent of nickel mineralisation is increasing.

DHEM is optimal when off-hole conductors are up to 50 metres away. As hole AELD0003 intercepted the massive sulphide (conductor), its DHEM survey results were largely ineffective and inconclusive.

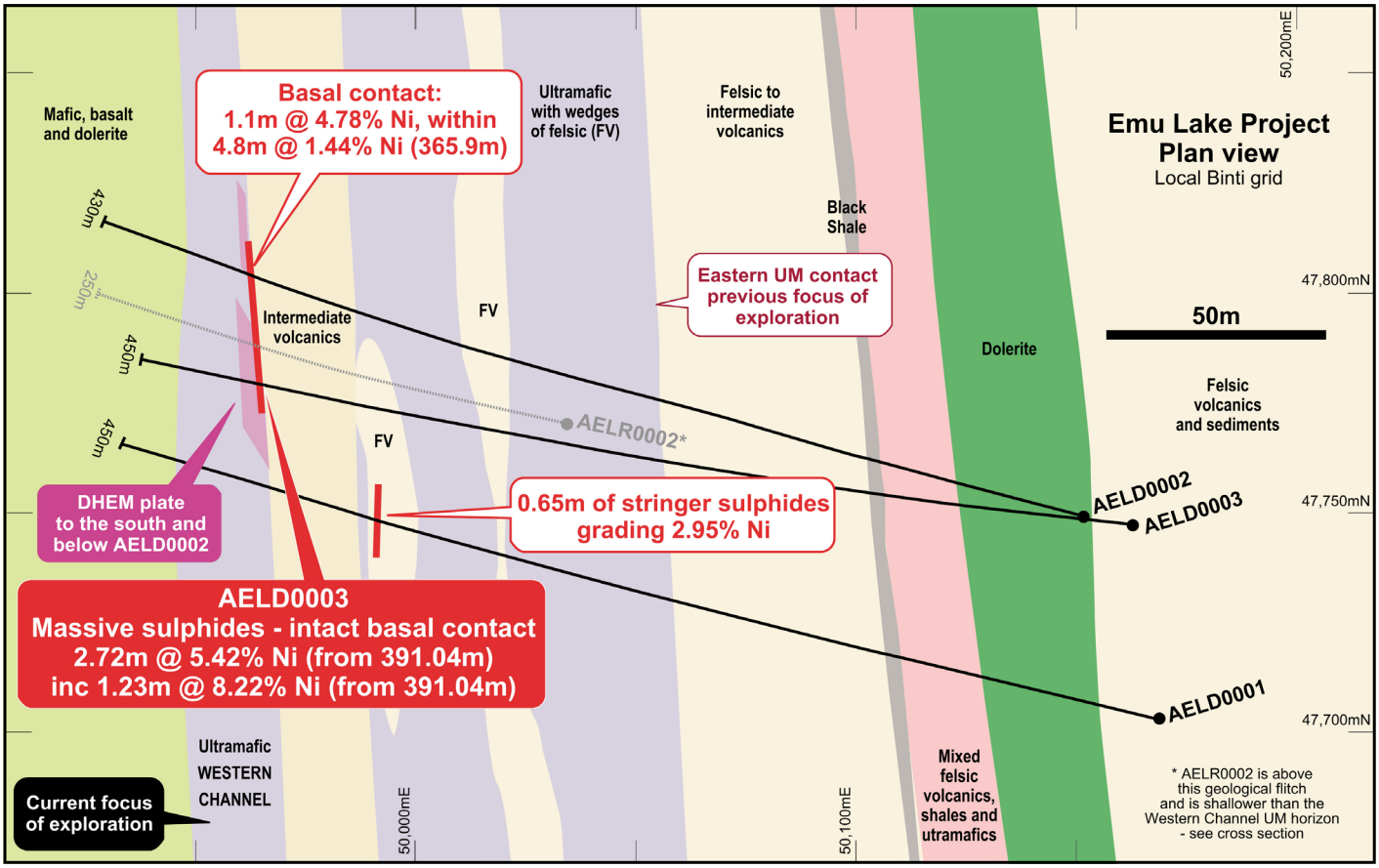
A recently completed RC drill hole, AELR0002, was drilled up plunge of AELD0002 and confirms up-dip continuity of the Western Ultramafic “fertile horizon” (Figures 4 and 5).

The AELR0002 komatiite flows are intensely altered and only recognised as ultramafic rocks using Ardea’s geochemical indices (Table 1). This non-recognition of ultramafic has significantly contributed to the absence of historic drill exploration on what should have been a high priority target.

Neither surface geochemical sampling nor surface geophysical surveys are likely to detect such a system, with drilling and DHEM the most effective exploration method for this style of "blind" deposit. The exploration difficulty is further exacerbated by the limited strike length of Silver Swan style mineral systems.

The mineralised zone defined in Ardea drill holes AELD0002 and AELD0003, is open in all directions and shows increased thickness of the channel, in the down-plunge direction.

With Ardea controlling 20km of strike of this essentially unexplored komatiite channel system, there is significant scope to make additional discoveries.



Mineralisation of the AELD0003 style would be expected to generate a premium nickel sulphide concentrate with high copper and PGE credits. Importantly, the AELD0003 massive nickel sulphide mineralisation has no arsenic penalty component.

From a mining perspective, there is an absence of talc-chlorite schist in association with the mineralisation, suggesting good ground conditions in any future mining.

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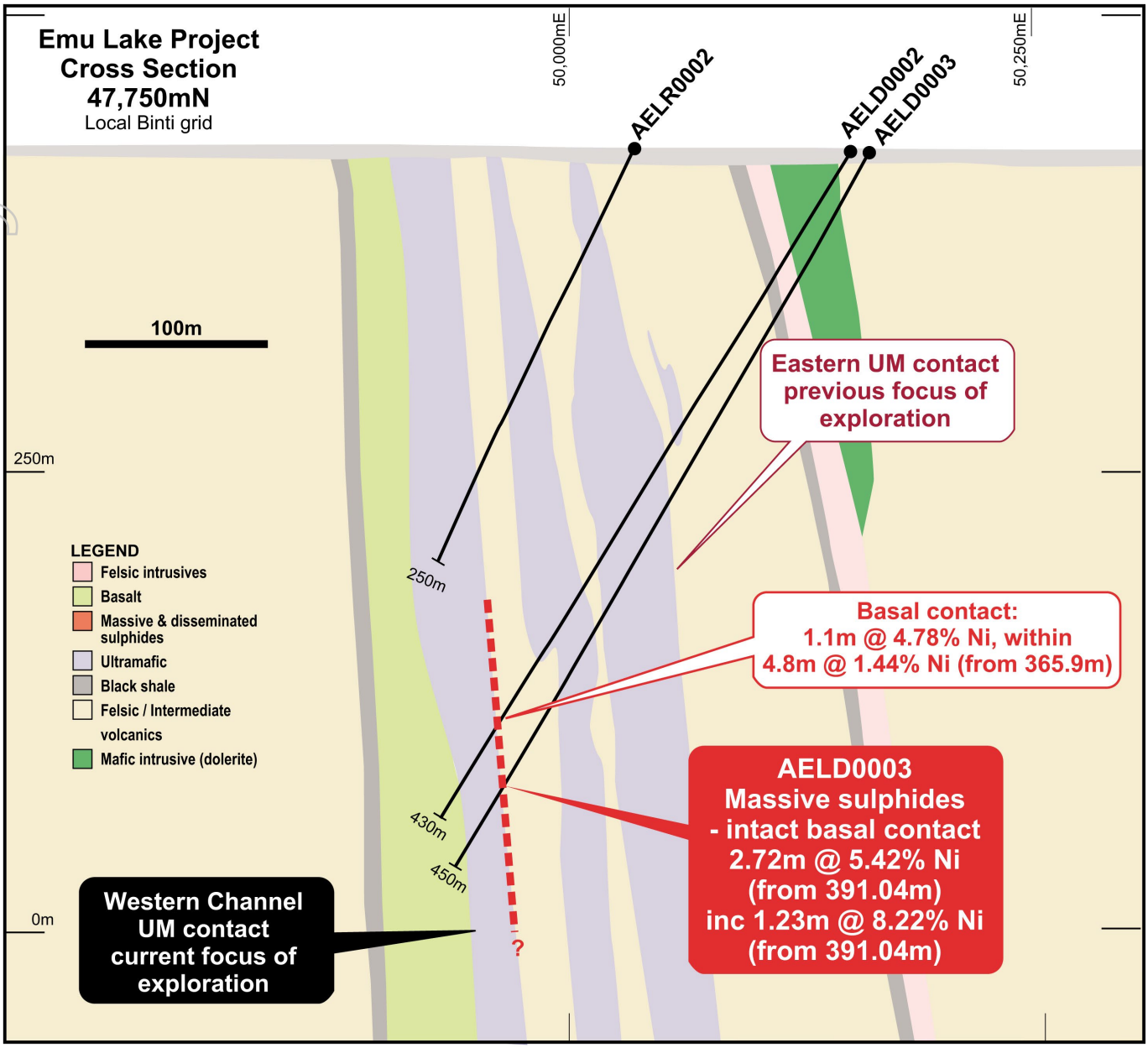

Next Steps

An Exploration Incentive Scheme (EIS) diamond hole (co-funded with the WA State Government) has been approved to test the down plunge extension of AELD0003. Drill commencement will be subject to rig availability, which currently is limited.

CSIRO work closely with Ardea and are currently researching the nickel sulphide mineralised occurrences and komatiite flow channel palaeo-geography at Emu Lake. Their findings will further assist with nickel sulphide exploration vectoring.

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Table 1: STRATIGRAPHIC NICKEL SULPHIDE ENDOWMENT

Ardea 2021 Drill Hole	From metres	To metres	Width metres	% Ni cut-off	Lith 1	Lith 2	Stratigraphic Unit	Intercepts Ni %	Cu %	Pd g/t	Pt g/t	S %	Cr %	Mg %	Au g/t	Ag g/t	As ppm
AELD0001	120.20	122.00	1.80	n/a	ZSDS	Fd	EU Footwall Dacite	0.00	0.01	-0.01	-0.01	1.64	0.00	0.7	**0.58**	0.20	**9,867**
AELD0001	269.00	270.00	1.00	0.25-0.49	ZSDS	Uop	Central Ultramafic	0.47	0.01	0.14	0.06	0.46	0.13	18.6	0.01	0.10	50
AELD0001	270.00	274.00	4.00	0.5-0.99	ZSDS	Uoo	Central Ultramafic	**0.68**	**0.03**	**0.28**	**0.12**	**0.53**	0.13	18.8	0.02	0.48	13
AELD0001	274.00	277.00	3.00	0.25-0.49	Uoo		Central Ultramafic	0.37	0.00	0.08	0.04	0.17	0.13	19.6	0.01	0.07	-3
AELD0001	335.00	336.70	1.70	0.25-0.49	ZSDS	Fd	WU Footwall Dacite	0.37	0.04	0.51	0.07	1.54	0.04	4.3	0.01	0.44	**1,269**
AELD0001	336.70	337.35	0.65	>1.00	ZSMS	Fd	WU Footwall Dacite	**2.95**	**0.08**	**0.24**	**0.12**	**14.40**	0.05	5.0	0.03	2.70	**1,180**
AELD0001	337.35	340.60	3.25	0.25-0.49	ZSDS	Fd	WU Footwall Dacite	0.38	0.02	0.04	0.00	0.99	0.03	4.5	0.01	0.57	**1,795**
AELD0001	400.00	403.00	3.00	0.25-0.49	Uom		Western Ultramafic	0.23	0.00	-0.01	-0.01	0.20	0.13	19.6	0.01	-0.10	73
AELD0002	365.90	366.90	1.00	0.25-0.49	Fd		WU Footwall Dacite	0.30	0.13	0.21	0.12	0.65	0.01	2.4	**0.07**	1.10	- 10
AELD0002	366.90	368.00	1.10	>1.00	ZSMS	Uom	Western Ultramafic	**4.78**	**0.16**	**0.47**	**0.20**	**16.10**	0.09	6.5	0.03	0.46	-10
AELD0002	368.00	369.70	1.70	0.5-0.99	ZSDS	Uom	Western Ultramafic	**0.59**	**0.06**	**0.11**	**0.04**	**1.80**	0.16	18.5	0.01	-0.02	14
AELD0002	369.70	375.70	6.00	0.25-0.49	Uom		Western Ultramafic	0.27	0.00	0.03	0.01	0.35	0.15	20.1	0.00	-0.07	-7
AELD0003	296.00	298.00	2.00	0.5-0.99	ZSDS	Uoo	Central Ultramafic	0.57	0.01	0.16	0.07	0.37	0.13	19.0	0.01	-0.10	10
AELD0003	310.00	312.00	2.00	0.25-0.49	Uom		Central Ultramafic	0.25	0.00	-0.01	-0.01	0.10	0.10	20.6	0.00	-0.10	10
AELD0003	391.04	393.76	2.72	>1.00	ZSMS	Fd	WU Footwall Dacite	**5.42**	**0.85**	**0.58**	**0.27**	**20.95**	0.11	2.1	0.04	3.01	-3
AELD0003	393.76	417.00	23.24	0.25-0.49	Uom		Western Ultramafic	0.25	0.00	0.02	0.01	0.21	0.15	19.2	0.00	-0.10	11
AELR0002	48.00	56.00	8.00	0.25-0.49	Uoo		Eastern Ultramafic	0.26	0.00	0.02	0.01	0.01	0.27	14.1	0.01	-0.10	50
AELR0002	122.00	130.00	8.00	0.25-0.49	Uvk		Central Ultramafic	0.23	0.01	0.02	0.01	0.30	0.10	13.6	0.01	0.10	190
AELR0002	200.00	208.00	8.00	0.25-0.49	ZSDS	Uom	Western Ultramafic	0.31	0.01	0.05	0.03	0.59	0.14	15.6	0.01	-0.10	1,140
AELR0002	208.00	250.00	42.00	0.25-0.49	Uom		Western Ultramafic	0.24	0.00	0.00	0.00	0.11	0.12	20.4	0.00	-0.10	5

Uvk	volcanic komatiite
Uop	olivine pyroxene cumulate
Uom	olivine mesocumulate
Uoo	olivine orthocumulate
Fd	Dacite, py-arsenopyrite altered
ZSMS	nickel massive sulphide
ZSDS	nickel disseminated sulphide

Authorised for lodgement by the Board of Ardea Resources Limited.

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

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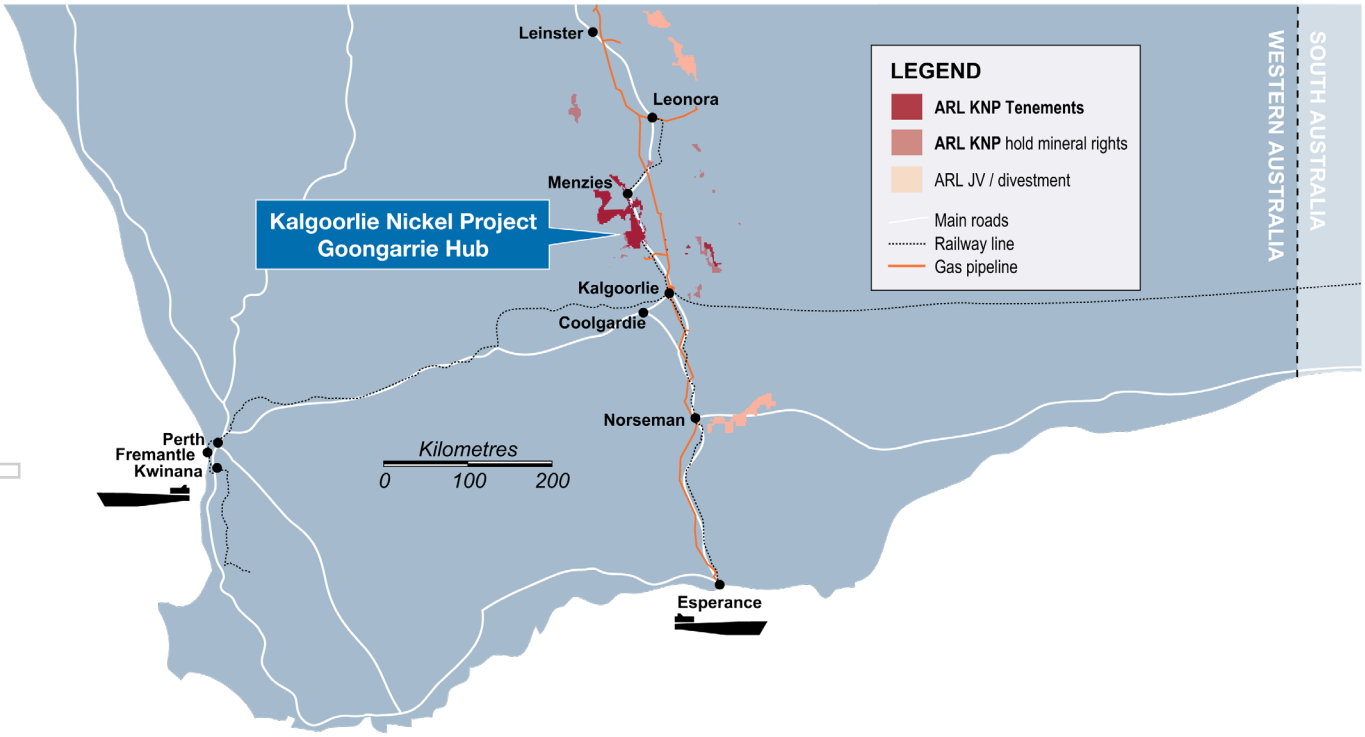
About Ardea Resources

Ardea Resources (ASX:ARL) is an ASX-listed 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 **830Mt at 0.71% nickel and 0.046% cobalt for 5.9Mt of contained nickel and 380kt of contained cobalt** (ARL ASX announcements 15 February, 16 June 2021), located in a jurisdiction with exemplary ESG credentials.
- Advanced-stage exploration at compelling nickel sulphide targets, such as Emu Lake and Critical Minerals targets within the KNP Eastern Goldfields world-class nickel-gold province, with all exploration targets complementing the KNP nickel development strategy.



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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.

Compliance Statement (JORC 2012)

The exploration and industry benchmarking summaries are based on information reviewed or compiled by Mr. Andrew Penkethman, who is a Fellow of the Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. Mr. Penkethman 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 activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr. Penkethman has reviewed this press release and consents to the inclusion in this report of the information in the form and context in which it appears. Mr. Penkethman owns Ardea shares.

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Appendix 1 - Collar Location Data

Collar location data for all new diamond and RC drill holes completed by Ardea Resources at Emu Lake.

Drill hole	Type	Depth (m)	Tenement	Grid	Easting (mE)	Northing (mN)	RL (mASL)	Dip (°)	Azimuth (°)
AELD0003	DD	450m	M27/506	MGA94_51	400105	6647878	422.7	-60.5	235.9
AELR0002	RC	250m	M27/506	MGA94_51	399993	6647812	421.55	-63	239

Appendix 2 - Assay Results

All assays from recent diamond and RC drilling program at Emu Lake.
Abbreviations used: Ni – nickel, Co – cobalt, As – arsenic, Pt – platinum, Pd – palladium, Cu – copper, m – metre, % – percent, ppm – parts per million, ppb - parts per billion, b.d. – below detection, ns. – not sampled.

Hole	From (m)	To (m)	Sample number	Ni (%)	Co (%)	As (ppm)	Pt (ppb)	Pd (ppb)	Cu (%)
AELR0002	0	2	AR044892	0.01	b.d	50	4	3	0.006
AELR0002	2	8	AR044893	0	b.d	30	2	2	0.002
AELR0002	8	16	AR044894	0	b.d	40	2	b.d	0.006
AELR0002	16	24	AR044896	0.01	0.001	20	4	2	0.005
AELR0002	24	32	AR044897	0.01	0.001	40	7	3	0.011
AELR0002	32	40	AR044898	0.04	0.007	40	6	3	0.016
AELR0002	40	48	AR044899	0.15	0.010	40	20	14	0.012
AELR0002	48	56	AR044900	0.26	0.012	50	18	8	0.004
AELR0002	56	60	AR044901	0.19	0.009	10	18	11	0.007
AELR0002	60	61	AR044902	0.2	0.009	70	8	5	b.d
AELR0002	61	62	AR044903	0.19	0.008	90	6	3	b.d
AELR0002	62	63	AR044904	0.19	0.008	110	6	4	b.d
AELR0002	63	64	AR044905	0.21	0.008	150	6	5	b.d
AELR0002	64	65	AR044907	0.22	0.008	170	11	4	0.001
AELR0002	65	66	AR044908	0.2	0.009	240	14	6	0.005
AELR0002	66	74	AR044909	0.12	0.005	150	4	2	0.002
AELR0002	74	82	AR044910	0.01	b.d	b.d	b.d	b.d	0.004
AELR0002	82	90	AR044911	0	b.d	b.d	b.d	b.d	0.004
AELR0002	90	98	AR044912	0.01	0.001	b.d	b.d	b.d	0.006
AELR0002	98	106	AR044913	0	0.001	b.d	b.d	b.d	0.005
AELR0002	106	114	AR044914	0.01	0.002	b.d	b.d	b.d	0.004
AELR0002	114	122	AR044915	0.2	0.008	250	4	3	b.d
AELR0002	122	130	AR044917	0.23	0.008	190	21	11	0.007
AELR0002	130	138	AR044918	0.13	0.006	800	6	7	0.004
AELR0002	138	146	AR044919	0.15	0.006	1410	7	9	0.002
AELR0002	146	154	AR044920	0.16	0.006	1350	3	3	0.001
AELR0002	154	162	AR044921	0.13	0.006	1160	3	3	0.001
AELR0002	162	170	AR044922	0.05	0.004	390	3	3	0.004
AELR0002	170	171	AR044923	0.01	0.004	30	10	10	0.008
AELR0002	171	172	AR044924	0.01	0.004	30	10	11	0.012
AELR0002	172	173	AR044925	0.01	0.005	30	10	11	0.011
AELR0002	173	174	AR044927	0.01	0.005	20	12	12	0.014
AELR0002	174	175	AR044928	0.02	0.005	60	10	11	0.015
AELR0002	175	176	AR044929	0.01	0.004	b.d	10	12	0.017
AELR0002	176	184	AR044930	0.01	0.003	20	6	5	0.008
AELR0002	184	192	AR044931	0	0.002	b.d	b.d	b.d	0.005
AELR0002	192	200	AR044932	0.01	0.002	b.d	3	2	0.013
AELR0002	200	208	AR044933	0.31	0.010	1140	54	25	0.009
AELR0002	208	216	AR044934	0.23	0.007	40	6	4	b.d
AELR0002	216	224	AR044935	0.23	0.010	b.d	2	3	b.d
AELR0002	224	232	AR044937	0.23	0.009	10	2	3	b.d
AELR0002	232	240	AR044938	0.26	0.008	b.d	3	2	0.001
AELR0002	240	242	AR044939	0.23	0.009	b.d	5	3	b.d
AELR0002	242	246	AR044940A	0.25	0.009	b.d	3	2	b.d
AELR0002	246	250	AR044941A	0.24	0.009	10	6	2	b.d

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Assay Results (continued)

Hole	From (m)	To (m)	Sample number	Ni (%)	Co (%)	As (ppm)	Pt (ppb)	Pd (ppb)	Cu (%)
AELD0003	0.00	222.00	AELD0003_0_222	ns.	ns.	ns.	ns.	ns.	ns.
AELD0003	222.00	224.00	AR044943	0.18	0.010	670	10	15	0.012
AELD0003	224.00	296.00	AELD0003_224_296	ns.	ns.	ns.	ns.	ns.	ns.
AELD0003	296.00	298.00	AR044944	0.57	0.010	10	70	155	0.006
AELD0003	298.00	310.00	AELD0003_298_310	ns.	ns.	ns.	ns.	ns.	ns.
AELD0003	310.00	312.00	AR044945	0.25	0.009	10	b.d	b.d	b.d
AELD0003	312.00	320.00	AELD0003_312_320	ns.	ns.	ns.	ns.	ns.	ns.
AELD0003	320.00	322.00	AR044946	0.2	0.008	10	b.d	b.d	b.d
AELD0003	322.00	330.00	AELD0003_322_330	ns.	ns.	ns.	ns.	ns.	ns.
AELD0003	330.00	332.00	AR044947	0.14	0.009	550	b.d	b.d	b.d
AELD0003	332.00	375.00	AELD0003_332_375	ns.	ns.	ns.	ns.	ns.	ns.
AELD0003	375.00	377.00	AR044948	0.01	0.003	10	b.d	b.d	0.009
AELD0003	377.00	379.00	AR044949	0	0.002	20	b.d	b.d	0.008
AELD0003	379.00	380.00	AR044950	0.01	0.001	b.d	b.d	b.d	0.007
AELD0003	380.00	382.00	AR044951	0	0.001	b.d	b.d	b.d	0.006
AELD0003	382.00	384.00	AR044954	0	0.002	b.d	b.d	b.d	0.012
AELD0003	384.00	386.00	AR044955	0	0.001	b.d	b.d	b.d	0.012
AELD0003	386.00	388.00	AR044956	0.01	0.001	b.d	b.d	b.d	0.009
AELD0003	388.00	389.00	AR044957	0.09	0.003	200	90	130	0.061
AELD0003	389.00	390.00	AR044958	0.01	0.001	b.d	b.d	b.d	0.003
AELD0003	390.00	391.04	AR044959	0.03	0.003	b.d	b.d	b.d	0.009
AELD0003	391.04	391.63	AR044961	8.14	0.194	b.d	330	365	0.959
AELD0003	391.63	392.27	AR044962	8.3	0.188	b.d	295	555	0.166
AELD0003	392.27	392.85	AR044963	2.67	0.111	10	210	820	1.800
AELD0003	392.85	393.20	AR044964	1.1	0.018	10	275	545	0.049
AELD0003	393.20	393.76	AR044965	4.83	0.179	b.d	255	590	1.040
AELD0003	393.76	394.46	AR044968	0.21	0.007	10	70	70	0.011
AELD0003	394.46	395.00	AR044969	0.33	0.011	10	15	30	0.007
AELD0003	395.00	396.00	AR044970	0.25	0.010	30	10	20	0.022
AELD0003	396.00	397.00	AR044971	0.22	0.009	20	5	10	0.018
AELD0003	397.00	398.00	AR044972	0.21	0.009	b.d	5	5	0.018
AELD0003	398.00	399.00	AR044973	0.19	0.009	b.d	5	10	0.018
AELD0003	399.00	401.00	AR044974	0.22	0.009	10	b.d	10	0.003
AELD0003	401.00	403.00	AR044975	0.29	0.010	20	10	20	0.003
AELD0003	403.00	405.00	AR044976	0.23	0.009	10	b.d	b.d	b.d
AELD0003	405.00	407.00	AR044977	0.25	0.010	10	5	10	b.d
AELD0003	407.00	409.00	AR044980	0.24	0.008	10	10	10	b.d
AELD0003	409.00	411.00	AR044981	0.31	0.010	10	20	50	b.d
AELD0003	411.00	413.00	AR044982	0.23	0.008	10	b.d	b.d	b.d
AELD0003	413.00	415.00	AR044983	0.33	0.010	20	20	40	0.001
AELD0003	415.00	417.00	AR044984	0.25	0.010	10	b.d	b.d	b.d
AELD0003	417.00	419.00	AR044985	0.17	0.009	20	b.d	b.d	0.002
AELD0003	419.00	421.00	AR044986	0.17	0.009	20	b.d	b.d	0.003
AELD0003	421.00	423.00	AR044987	0.2	0.010	20	b.d	b.d	0.002
AELD0003	423.00	425.00	AR044988	0.2	0.010	20	b.d	b.d	0.001
AELD0003	425.00	427.00	AR044989	0.17	0.010	20	b.d	b.d	0.001
AELD0003	427.00	429.00	AR044992	0.18	0.010	10	b.d	5	0.002
AELD0003	429.00	431.00	AR044993	0.15	0.010	10	b.d	b.d	0.004
AELD0003	431.00	431.80	AR044994	0.13	0.010	10	b.d	b.d	0.021
AELD0003	431.80	433.00	AR044995	0.05	0.008	10	b.d	b.d	0.003
AELD0003	433.00	434.00	AR044996	0.03	0.005	10	10	b.d	0.004
AELD0003	434.00	435.34	AR044997	0.04	0.007	10	5	5	0.005
AELD0003	435.34	436.70	AR044998	0.01	0.001	b.d	b.d	b.d	0.009
AELD0003	436.70	438.00	AR044999	0.07	0.008	10	5	10	0.012
AELD0003	438.00	439.55	AR045000	0.09	0.008	10	5	10	0.003
AELD0003	439.55	440.66	AR045001	0.02	0.005	b.d	b.d	b.d	0.015
AELD0003	440.66	441.40	AR045004	0.04	0.008	10	5	5	0.004
AELD0003	441.40	442.33	AR045005	0.02	0.004	b.d	b.d	b.d	0.019
AELD0003	442.33	443.00	AR045006	0.07	0.009	20	5	5	0.007
AELD0003	443.00	445.00	AR045007	0.03	0.007	b.d	5	5	0.011
AELD0003	445.00	447.00	AR045008	0.05	0.009	30	5	5	0.013
AELD0003	447.00	449.00	AR045009	0.04	0.007	10	5	5	0.007
AELD0003	449.00	450.00	AR045010	0.03	0.007	10	10	5	0.012

Appendix 3 - JORC Code, 2012 Edition, Table 1 report

Section 1 Sampling Techniques and Data

(Criteria in this section applies to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.*	• Samples from NQ sized drill core were sampled on a nominal 1 to 2 metre basis taking into account smaller sample intervals up to geological contacts and massive sulphide zones. • For AELD0003, the core samples were cut in half with one half remaining in the trays as a reference and the other half taken as the laboratory sample. • For RC hole AELR0002, the RC samples were taken as either 1m, 2m, 4m, or 8m composite samples based on observed and interpreted geological intervals.
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details.*	• AELD0003, diamond core drilling commencing with HQ size and then reducing to NQ size when fresh rock was encountered. • Diamond core drilling was undertaken by DDH1 and RC drilling by Kennedy Drilling using a face sampling hammer.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.*	• Drill sample recovery was recorded from the RC drill samples and diamond drilling core blocks – no material issues were reported and apart from some zones of broken ground, recoveries were consistently greater than 90%.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	• The RC drill chips, and diamond core were geologically logged by qualified geologists and recorded in the Ardea database.
Sub-sampling techniques and sample preparation	• *For all sample types, the nature, quality, and appropriateness of the sample preparation technique.*	• Samples were prepared and assayed in industry standard laboratories and significant results reported to JORC (2012) standards. • Samples were be crushed and ground to nominal 75-micron size. • The samples were split into a pulp fraction for analysis and a pulp-reject for storage.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *Nature of quality control procedures adopted (e.g., standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e., lack of bias) and precision have been established.*	• Samples were assayed in an industry standard laboratory and significant results reported to JORC (2012) standards. • QAQC samples (blanks and standards) were inserted every 10 samples. • A handheld Niton XRF unit was used as a guide to geochemical composition of different geological units and confirmation of visually observed and logged mineralisation. No portable XRF values are reported.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• No independent verification of results has been undertaken at this stage. • All field and laboratory data has been entered into an industry standard database. • No adjustment to assay data was done.

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Criteria	JORC Code explanation	Commentary
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	• The drill collars were surveyed by Lonestar, RTK_ GPS which is considered sufficient for the DHEM survey. Downhole surveys were taken every 30m downhole with a north seeking gyro tool (CHAMP).
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Drilling is of an exploration nature and no resource style drilling requiring specific drill spacing was undertaken.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	• The drilling orientation was designed to intersect the mineralised lenses at a close to perpendicular angle. The mineralised lenses are dipping sub-vertical, and the drilling is approximately at -60 degrees towards the West. This will vary from hole to hole.
Sample security	• *The measures taken to ensure sample security.*	• Sampling was undertaken by Ardea personnel and reputable laboratories used. No issues with sample security are reported.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Given the early stage of the exploration results, no audits or reviews have been undertaken or considered necessary at this stage.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The project area locations are shown on Figure 3 of this report and described in the body of the report. • The tenure is secure and held 100% by Ardea under granted Mining Lease, M27/506. • Given the early stage of the exploration no mining specific applications have been made, but there are no known impediments (e.g., *overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings)* to mining in the tenure.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• The Emu Lake project has been explored for nickel sulphides since 2003 by Image Resources, Skryne Hill, Jubilee Mines, Emu Nickel, Xstrata – the majority of the drilling was undertaken by these companies.
Geology	• *Deposit type, geological setting, and style of mineralization.*	• The Company is seeking Archaean komatiite hosted nickel sulphide and related deposits in the project areas, commonly referred to as Kambalda-style.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*	• Significant intercepts from the Emu Lake drilling have been provided by Ardea in this release and previous ASX reports.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g., cutting of high grades) and cut-off grades are usually Material and should be stated.*	• The reported assays are weighted for their assay interval width. • No cutting of grades has been undertaken.

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Criteria	JORC Code explanation	Commentary
	• *Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.*	
Relationship between mineralization widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*	• True width of the reported sulphide zones has not been attempted during this early stage of reporting. True width is approximately the same as reported down-hole width.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Where relevant, a diagram showing the hole positions relevant for the current phase of exploration is included in the release.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Results.*	• The reporting is balanced taking into account the early stage of the exploration and the summary nature of this ASX report.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Down-hole electromagnetic surveys have been undertaken with the survey designed by Newexco geophysical consultants. The results have been discussed with Newexco but a formal report has not yet been received.

Future work	• *The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).*	• Ardea is seeking Archaean komatiite hosted, Kambalda-style, nickel sulphide deposits on its extensive ultramafic tenement holding in the Eastern Goldfields of Western Australia.
		• Future work at Emu Lake will include:
		  • An Exploration Incentive Scheme (EIS) diamond hole (co-funded with the Government) has been approved to test the down plunge extension of AELD0003. Drill commencement will be subject to rig availability.
		  • CSIRO work closely with Ardea and are currently researching nickel sulphides at Emu Lake. The findings will help NiS exploration vectoring.